

Technology Review

Edited at the Massachusetts Institute of Technology

March, 1964



Communication Problems . . . Pages 13 to 19

technology review

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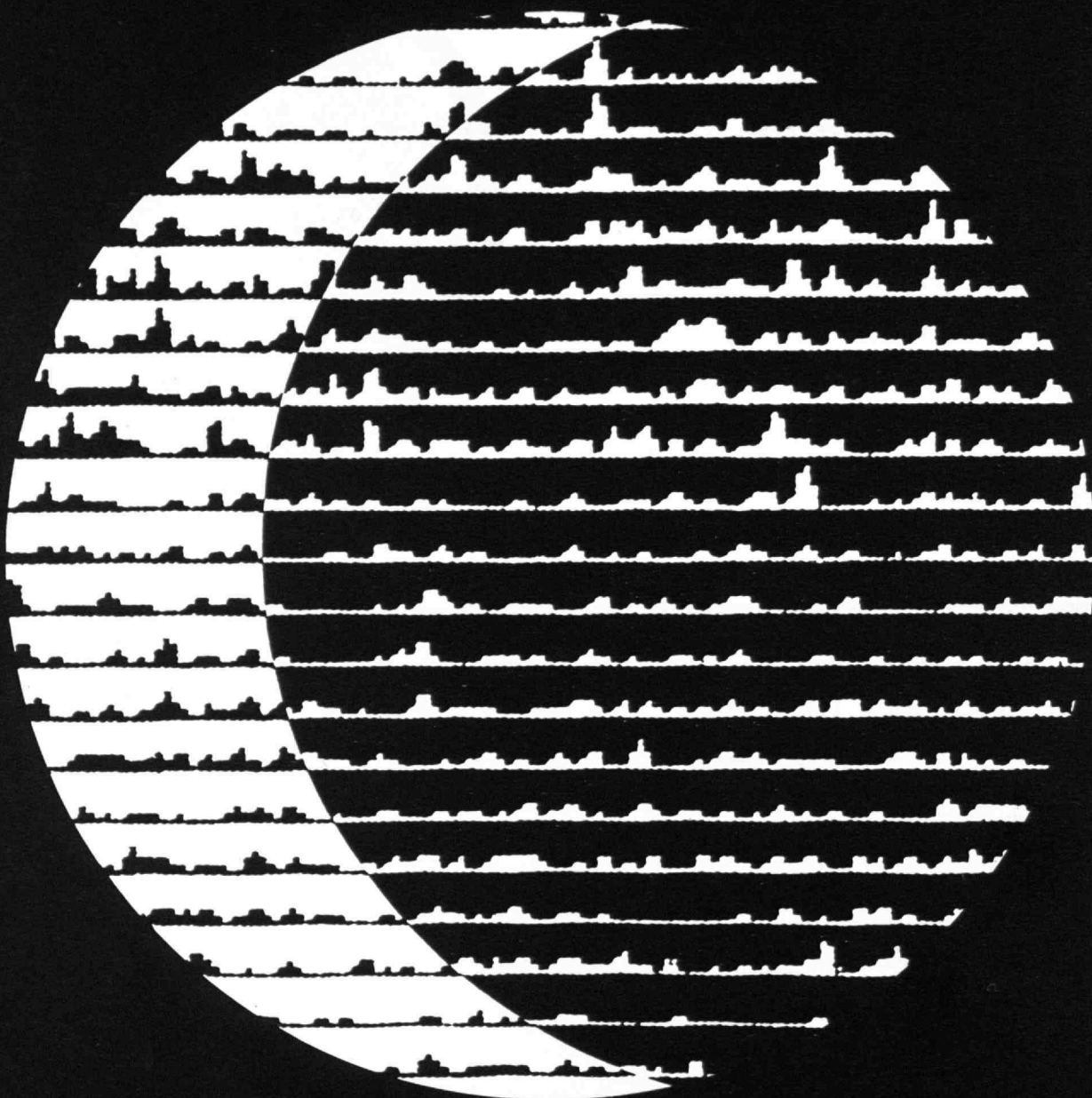
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A description of the Laboratory's work will be sent upon request.



ALFRED P. SLOAN, JR., '95, was host to this year's Sloan Fellows in the M.I.T. School of Industrial Management on their recent New York visit. His new book, *"My Years With General Motors,"* is reviewed on page 24.

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The Review's publisher and editor is *Volta Torrey*; business manager, *R. T. Jope*, '28; assistant to the editor, *Ruth King*; and class news editor, *Roberta A. Clark*. Editorial consultants are *J. J. Rowlands*, *Francis E. Wylie*, and *John I. Mattill*. Members of its staff are *Joyce Skinner* and *Maxine Kenny*.

Officers of the Alumni Association of M.I.T. are: *Robert H. Winters*, '33, President; *Donald P. Severance*, '38, Executive Vice-president; *F. Leroy Foster*, '25, and *Samuel A. Groves*, '34, Vice-presidents; and *Frederick G. Lehmann*, '51, Secretary.

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Technology Review

Reg. U.S. Pat. Off.

Edited at the Massachusetts Institute of Technology

Volume 66, Number 5

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March, 1964

The Cover picture shows the Hayden Library at M.I.T. as it appears on these late winter evenings. Increasing demands on the libraries will be the subject of a special study that is reported on page 18.

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Individuals Noteworthy

At Lincoln Laboratory

WILLIAM H. RADFORD, '32, became director of the M.I.T. Lincoln Laboratory on February 1, and Benjamin Lax, '49, became associate director.

Professor Radford succeeds Professor Carl F. J. Overhage, who asked to be relieved of the assignment to direct a long-range program for the functional design of future scientific and technical libraries. Professor Radford has been with Lincoln Laboratory since its establishment in 1951 and was Professor Overhage's associate director.

Dr. Lax, the new Associate Director, is also director of the National Magnet Laboratory, and will continue to devote a portion of his time to it. He, too, has been on the Lincoln Laboratory staff since 1951 and before assuming his new post was head of its Solid State Division.

"Professor Radford and Dr. Lax have amply demonstrated during these years their high competence in research and in administration, and we may count ourselves fortunate in both of these appointments," said President Julius A. Stratton, '23.

"Dr. Overhage's administration at Lincoln was marked by a number of notable achievements, including successful completion of the work on the SAGE system of continental air defense; the establishment of the Mitre Corporation; and the reorientation of the technical program of the laboratory toward a new pattern of research and development in the fields of solid state, information processing, communications, control systems, radar, radio physics and astronomy, and space surveillance. Most recently the laboratory has been assigned key roles in the national program for defense against ballistic missiles and in the field of space communications for defense purposes.

"Professor Overhage leaves in Lincoln a laboratory of distinction and great value to the national security. He departs with the gratitude of M.I.T. and the departments of government which the laboratory has served well."



William H. Radford, '32

Professor Radford has worked with radio communications and electronics throughout his career. A graduate of Drexel Institute of Technology, he received his master's degree in Electrical Engineering from M.I.T., and in 1957 an honorary doctorate from Drexel. He joined the M.I.T. staff as a research assistant in 1932, and has been professor of electrical communications since 1952. He is chairman of the Electronics Panel of the U. S. Air Force Scientific Advisory Board, consultant to the President's Science Advisory Committee, and a member of other government advisory committees. He is a Fellow of the Institute of Electrical and Electronics Engineers and the American Association for the Advancement of Science.

Dr. Lax was born in Hungary, educated at Cooper Union, and came to M.I.T. to serve with the Radiation Laboratory. He received his doctorate from the Institute in 1949, and has since held important posts at Lincoln Laboratory. He is a Fellow of the American Physical Society and the American Academy of Arts and Sciences, and received the Physical Society's Oliver E. Buckley prize in 1960 for his contributions to microwave and infrared spectroscopy of semiconductors.

Modern Languages Head

WILLIAM F. BOTTIGLIA, Professor of Modern Languages and Humanities, will succeed Professor William N. Locke as Head of the Depart-



William F. Bottiglia

ment of Modern Languages next July 1. Professor Locke, who has headed the Department since 1945, will devote his full time to the libraries in the future.

Professor Bottiglia received his A.B., A.M., and Ph.D. degrees from Princeton University and taught there from 1934 to 1942. After an interval in industry he returned to academic life at St. Lawrence University in 1948, and later headed the Department of Romance Languages at Ripon College before coming to M.I.T. in 1956.

Professor Bottiglia is currently chairman of the Eighteenth Century French literature group of the Modern Language Association and a member of several other societies, including Phi Beta Kappa. He is the author of *Voltaire's Candide: Analysis of a Classic*, and has three times been editor of the Reports of the Northeast Conference on the Teaching of Foreign Languages. From 1957 to 1961 he and Mrs. Bottiglia were Faculty residents of Bexley Hall. Two years ago he introduced as an experiment a two-semester subject in Dante in the original Italian for students with no previous knowledge of the language—an experiment that has aroused much interest.

(Continued on page 6)

Donald F. Carpenter, '22, Is Nominated For the Alumni Association's Presidency

FOR ELECTION as the M.I.T. Alumni Association's 71st President, the National Nominating Committee has proposed *Donald F. Carpenter, '22*. For the vice-presidency, it has nominated *Philip H. Peters, '37*, and for membership on the Executive Committee it has named *Francis M. Mead, '29*, and *William S. Edgerly, '49*.

As the Association's nominees for Alumni Term Membership on the M.I.T. Corporation, it has designated *Emilio G. Collado, '31*, *Ivan A. Getting, '33*, and *Samuel A. Groves, '34*.

Mr. Carpenter retired as general manager of the Film Department of E. I. du Pont de Nemours & Co., in 1963 after having served that firm and the Remington Arms Company, a Du Pont subsidiary, in numerous positions since 1922. He was vice-president of Remington Arms from 1941 to 1948. He then was granted leave to be deputy to the Secretary of Defense on atomic energy matters, and became chairman of the U.S. Munitions Board.

When graduated from M.I.T., Mr. Carpenter was president of his

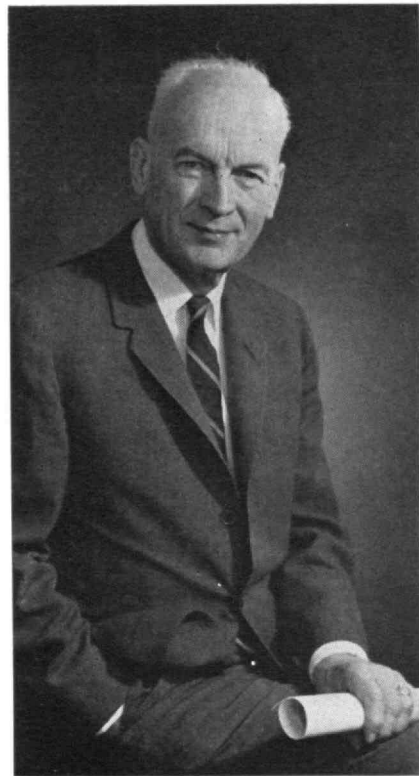
Class, and he has since served on many Institute committees. He is now a life member of the M.I.T. Corporation and on its Executive Committee.

Mr. Collado, one of the three proposed for Alumni Term Membership on the Corporation, is vice-president for finance of Standard Oil Company (New Jersey) and was formerly executive director of the International Bank for Reconstruction and Development.

Mr. Getting is president and a member of the board of trustees of Aerospace Corporation, and was elected to complete the term of John J. Wilson, '29, as an Alumni Term Member of the Corporation when the latter became secretary of the Corporation.

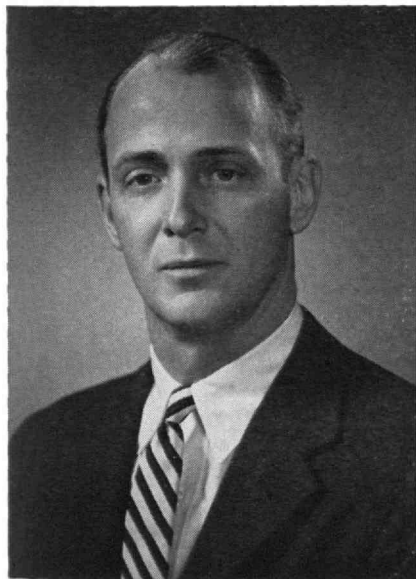
Mr. Groves is president and a director of United-Carr Fastener Corporation, and last year was elected to the vice-presidency of the Alumni Association.

The 1964 ballot also will carry the names of nominees for election to the National Nominating Committee from four districts. These will be: District 1, *Hugh S. Ferguson, '23*; District 2, *R. Barry Graham,*



Donald F. Carpenter, '22

'39, *Howard F. Russell, '23*, and *Thomas E. Shepherd, '22*; District 4, *Maxwell C. Coutts, '39*, *Charles F. Payne, '33*, and *Andrew P. Kellogg, '24*; and District 5, *Bernard H. Nelson, '35*, and *Clayton D. Grover, '22*.



PHILIP H. PETERS, '37, Vice-president of the John Hancock Mutual Life Insurance Co., was chairman of the Second Century Fund Area Organization and has been a class agent, class president, educational counselor, and member of the Association's Executive Committee.



FRANCIS M. MEAD, '29, is assistant vice-president (marketing) of the New England Telephone and Telegraph Company, a U.S. Army Major (Ret.), and was a regional chairman of the Faculty Salary Committee, and Second Century Fund Special Gifts Co-Chairman.



WILLIAM S. EDGERLY, '49, is vice-president and treasurer of the Cabot Corporation, with which he has been associated since 1952. He is a former president of the M.I.T. Club of Boston, and also has served the Institute and his community in numerous other capacities.

Individuals Noteworthy

(Continued from page 4)

Professors Honored

INSTITUTE PROFESSOR *Francis O. Schmitt* has received the T. Duckett Jones Award from the Helen Hay Whitney Foundation for outstanding research. . . . Dean *Jerome B. Wiesner* was given a special Citation of Merit at the Engineers Joint Council's conference on Engineering in National Affairs. . . . Professor *Arthur C. Cope* has been named a trustee of Battelle Memorial Institute. . . . Professor *Theos J. Thompson* has been reappointed to the Atomic Energy Commission's Advisory Committee on Reactor Safeguards for a four-year term.

Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

Harold W. Bibber, '20, the Alumni Certificate for Devoted Services by the Union College Alumni Association . . . *Lieutenant Colonel Gilbert G. Lorenz*, '34, the Outstanding Performance Rating by the Department of the Army.

The Gardner Lecturer

WILLIAM LITTLEWOOD, Vice-president of American Airlines since 1937, will give this year's Lester D. Gardner lecture on "The Early History of the Airlines," in the Kresge Auditorium at 8:30 P.M. on April 30. Mr. Littlewood is a member of the Executive Committee of the Defense Science Board, Department of Defense; has been chairman of the NACA and NASA Research Advisory Committee on Aircraft Operating Problems, and was president in 1959 of the Institute of the Aeronautical Sciences.

The Sailors' Salute

PAST and current generations of college sailors, and yachtsmen of New England, were invited to join in "A Salute to Jack Wood!" at the New England Intercollegiate Sailing Association's annual dinner on February 8 in Boston.

Walter C. Wood, '17, the M.I.T. Sailing Master since 1946 and the Master of Senior House from 1938 to 1944, expects to retire next June, and this tribute to him was arranged by a committee of alumni from many

New England schools under the co-chairmanship of William S. Widnall, '59, and Timothy M. Brown (Harvard, '54).

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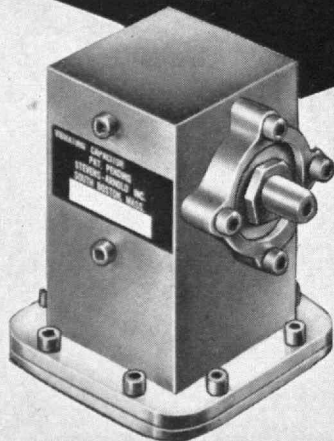
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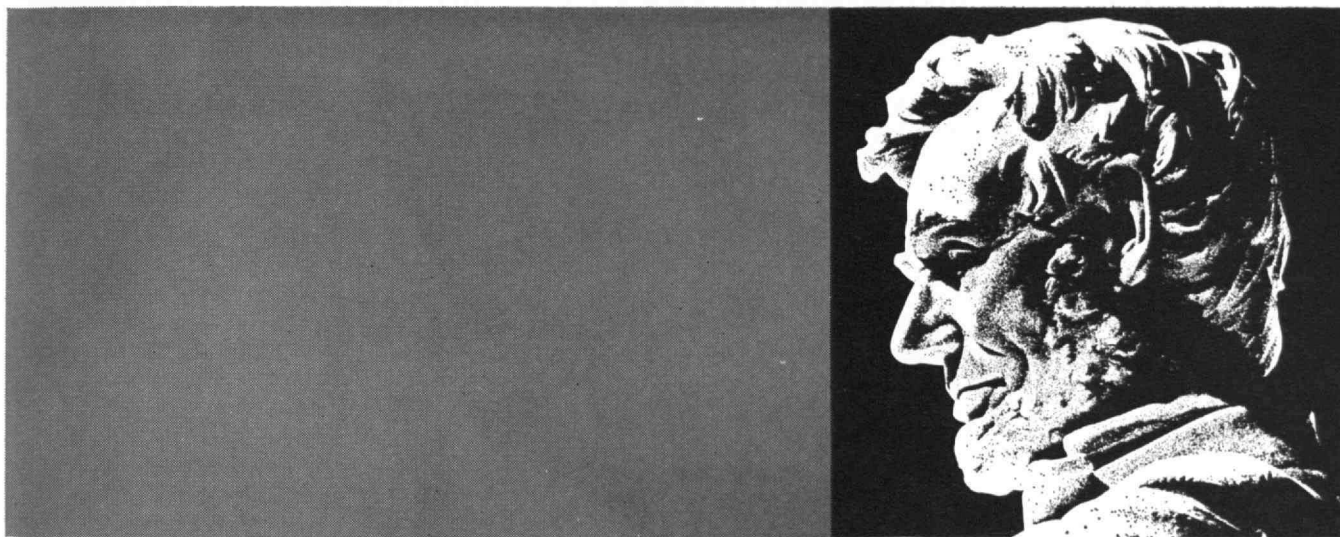
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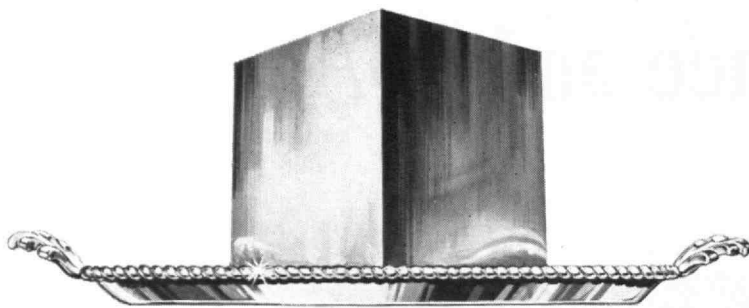
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Individuals Noteworthy

(Continued from page 6)

Meteorological Honors

THE American Meteorological Society, at its 44th annual meeting, gave its highest honor, the Carl-Gustaf Rossby Research Medal, to Professor *Jule G. Charney* of M.I.T., for his contributions to theoretical meteorology and related atmospheric sciences, and the Sverdrup Gold Medal to Professor *Henry M. Stommel*, for his work on ocean currents.

Thomas F. Malone, '46, received the Charles Franklin Brooks Award for services to the society; *Francis W. Reichelderfer*, a member of the Earth Sciences Visiting Committee at M.I.T., the Cleveland Abbe Award for distinguished service to atmospheric sciences; and *Richard J. Reed*, '49, the Meisinger Award for his study of synoptic meteorology and dynamical weather prediction.

Philip D. Thompson, '53, became president of the society, and *Lester Machta*, '48, was elected to its council, on which *Morris Neuburger*, '41, also will serve now as the retiring president.

Faculty Notes

PROVOST *Charles H. Townes* of M.I.T. and *Crawford H. Greenewalt*, '22, President of E. I. du Pont de Nemours & Company, are serving on the Statutory Visiting Committee of the National Bureau of Standards. . . . Professor *Bernard T. Feld* is one of the editors of a new quarterly entitled "Disarmament and Arms Control." . . . Professor *C. Stark Draper*, '26, will be the banquet speaker March 4 in Atlantic City at the American Meteorological Society's conference on atmospheric problems of aerospace vehicles.

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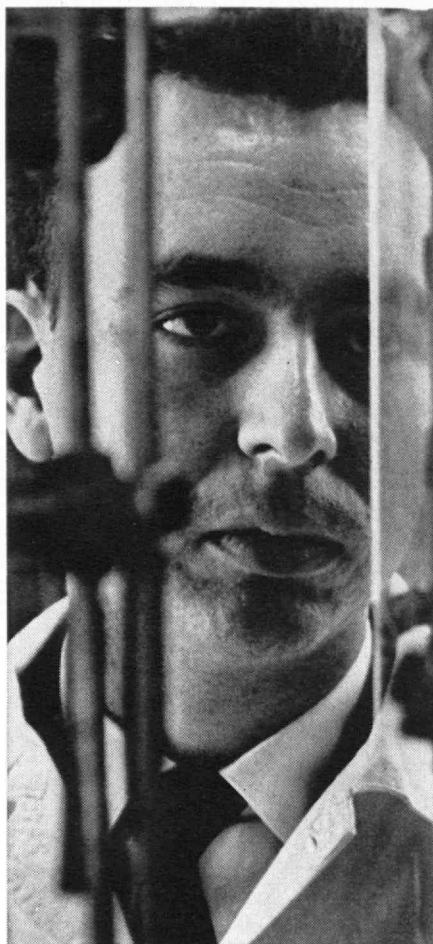
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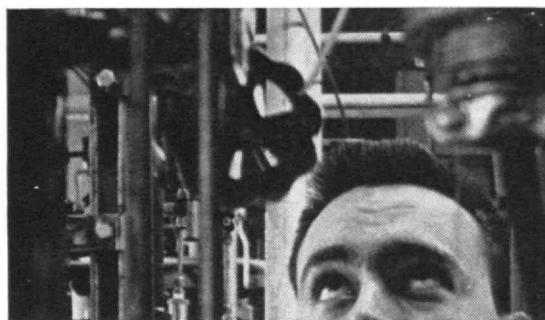
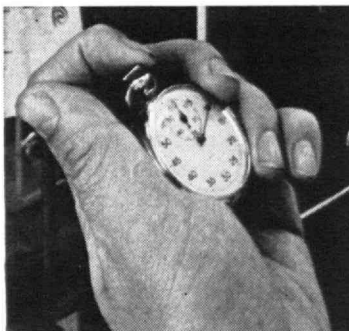
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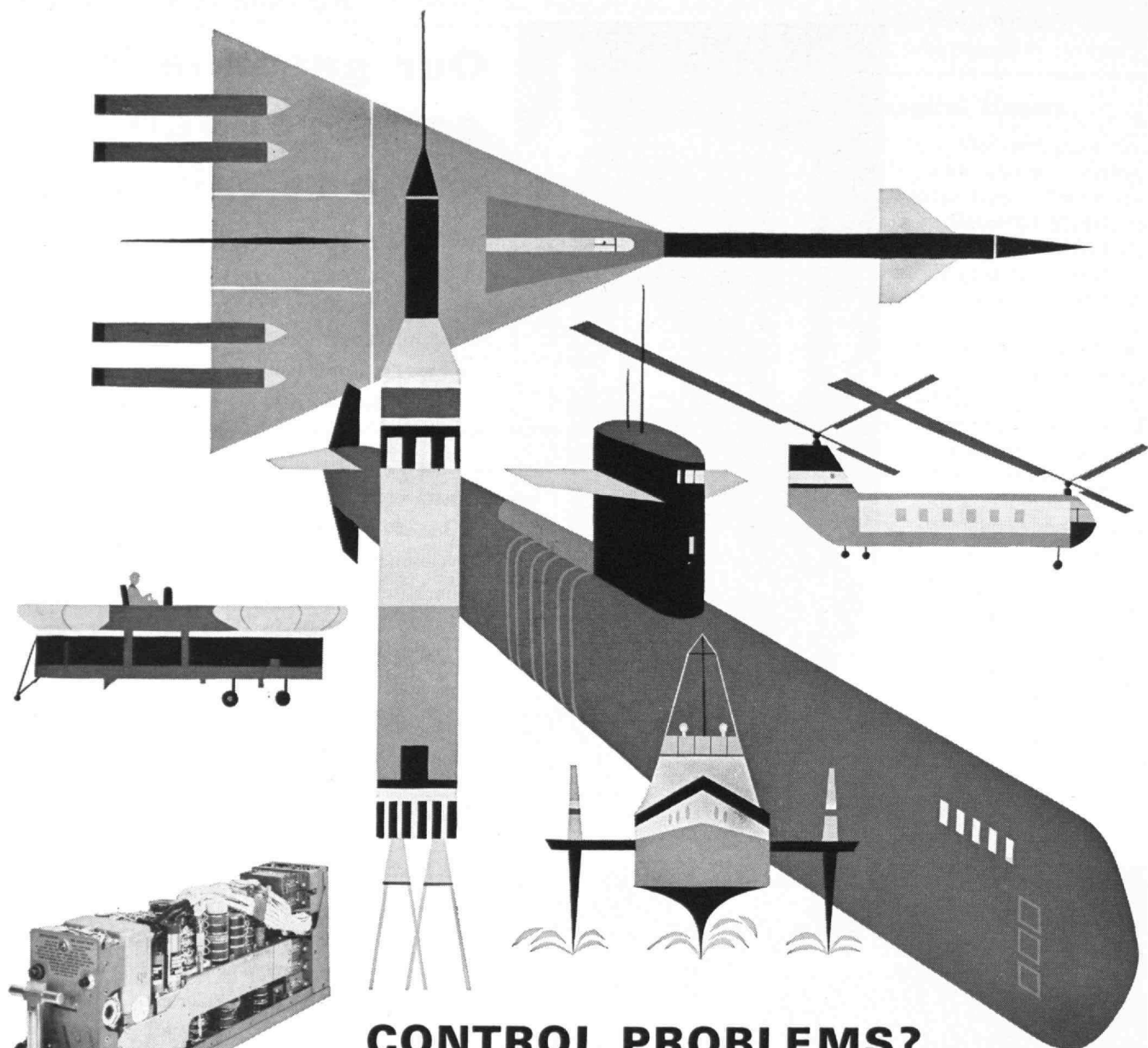


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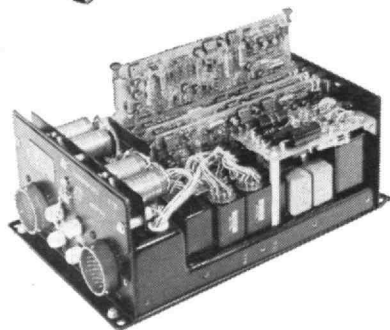
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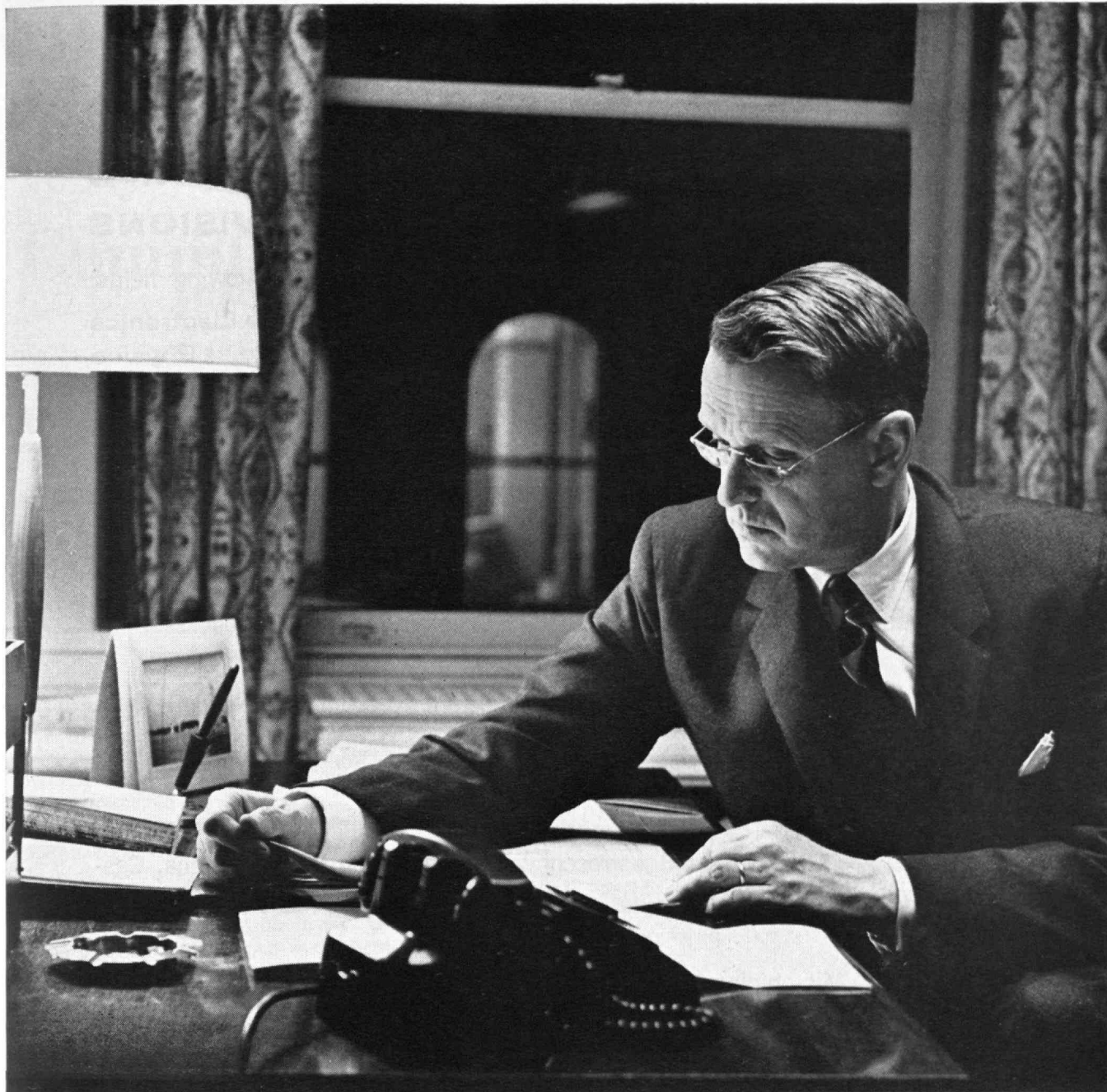
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The Biomedical Communication Problem

BY FRANCIS O. SCHMITT

Institute Professor, M.I.T.

A QUANTUM JUMP occurred in the last one-millionth part of the long history of adaptive genetic fumbings of evolutionary development when man appeared. His cerebral cortex is highly developed and he has the unique ability not only to know about nature and himself but to know that he knows; not only to think but also to express his thoughts in spoken, graphic, and written symbols: language, including its most abstract form, mathematics.

In the last ten-millionth part of the planet's existence, man has evolved not any superior kind of kidney, liver, or muscle—he seems, in fact, to be regressing along such lines—but rather a new product of his ability to process information symbolically expressed, namely science. Having developed instruments to extend and amplify his natively endowed sensory equipment, he has proceeded to develop a theoretical fabric which permits him to discover and characterize objects and processes which form no part of his common-sense, day-to-day life.

Indeed, some of his most brilliant discoveries seem to fly in the face of experience of the type with which the natural brain has learned, through evolution, to deal. An example is the atomic intranuclear particles so exotic as to deserve the term "strange particles." Is there no limit to what science can do? How will this information explosion affect society, which is another product of man's attempt to adapt to his environment and to his fellow man? Having outgrown the industrial revolution with its wholesale revision of century-old value systems, man is now subjecting himself to a new revolution, that of science and technology. Even at its early dawning this revolution has produced an acute crisis—the communications crisis.

The Information Explosion

Man's ability to accumulate, correlate, retrieve, and communicate scientific information has paced his progress from the beginning of recorded history. But it also has led to his present plight.

A neuroscientist sees "invisible colleges" as a means of meeting the information problem and gives a case history of one recently created

THIS ARTICLE was drawn from Institute Professor Francis O. Schmitt's remarks at a symposium last fall on "Communications and Medical Research," which was cosponsored by the University of Pennsylvania's Schools of Medicine and of Communications.

As the eminent British neurologist, Grey-Walter, has noted: "During the last two generations the rate of accumulation of knowledge has been so colossally accelerated that not even the most noble and most tranquil brain can now store and consider even a thousandth part of it. Humanity is in a crucial state, compared with which the constitution of the dinosaur and the community of the Tower of Babel were triumphantly successful."

Communication often fails between scientists in the same specialties as well as in different disciplines, between scientists and mass media of communication (press, magazines, radio, TV), and between these media and the public, including administrative and governmental officials. Members of Congress do not understand science or scientists, and vice versa—a dangerous entrance into an era of science and technology.

Professionals still are documenting and debating this crisis in communications, but some facts are already clear. The number of people concerned in one way or another with science and technology surpasses by far the total in all of the past. The National Science Foundation reports there are 1,350,000 scientists and engineers in the physical and life sciences. With backup personnel and families, the total might exceed 10 million citizens connected with the enterprise. And the total number is not as impressive as the rate of its increase.

A typical example of the severe dislocations that are now arising in the biomedical field is seen in the library. Some medical school libraries are preparing to move all but the last five years of volumes of journals to off-campus storage space. The number of technical journals being published has reached the astronomical total

of 120,000. Indeed, we now have bibliographies of bibliographies; the last issue of the *World Bibliography of Bibliographies* contains more than 100,000 separately collated volumes of bibliographies. And there are more than 500 specialized science-information services. Vannevar Bush, '16, chief of America's wartime science and technology establishment, has sounded the grim warning: "Science may become bogged down in its own products, inhibited like a colony of bacteria by its own exudations."

What steps can be taken to remedy the situation? As a biologist, I would like to suggest that we turn to nature for guidance, to the product of endless ages of nature's genetic experiments which, in the evolutionary process, eventually led to the development of the most fantastically efficient and versatile instrument of mass processing of data known on this planet: the human brain and the central nervous system.

The Cerebral Cortex

The brain of a higher mammal, and particularly that of man, differs from that of a lower vertebrate in the development of the cortex, which, in man, covers the entire brain. Seventy per cent of all the 10 billion nerve cells in the human brain are located in this rather thin cortex. The cerebral cortex endows man with marvelous qualities: a vast memory store available for instant retrieval and, more importantly, the ability quickly to integrate, assess, evaluate, and judge incoming information in the light of past experience, ignoring redundant, non-meaningful information, but taking quick and appropriate action when meaningful information presents itself. This judgmental ability, built into his neuronal and behavioral patterns, is used almost every moment of man's waking life.

Comparing society to the cortex with its 10 billion cells, fast readout, and superior analyzer-integrator systems suggests several ways to us that may be fruitful in improving communications within society.

First, if the human science and technological establishment should evolve along lines like that of the brain, the number of "nonscientist" individuals concerned in one way or another with processing of scientific information would grow to many times the total number of laboratory scientists and science and industrial personnel. For each single "executive type" unit performing clearly definable effector functions in the central nervous system, the cerebral cortex has a thousand neurons of the analyzer-integrator type. The most painstaking microscopic examination of the brain, made by diligent and devoted experts over many years, has revealed but a small fraction of the connections and circuitry of this cortical net. The sheer complexity of the cortex, and the fact that in the evolutionary process it proved desirable to increase enormously the number of cells involved in cerebral transactions, suggests a similar development in society's communications personnel and facilities.

Probably whole new categories of individuals, whose professional and financial status would be similar to that of the scientist, should appear. Perhaps this work would offer an excellent second career for retired scientists. The wealth of their experience could bring a valuable solution to our gnawing problem.

At the other end of the age scale, more and better scientific education is suggested. In addressing a centennial symposium of Boston College on "The Consequences of the Knowledge Explosion," Samuel Goudsmit said that the number of scientists is growing so rapidly that in a few generations everyone will be a scientist. It would have sounded ridiculous 2,000 years ago to have said, "Soon everyone will be a scribe." Yet today almost all men read and write. Someday soon, when the science and technology revolution has become fully established, another *R* may be added to the traditional three *R*'s—that of Research.

The second implication of brain functioning is that transmission and processing of information must be vastly improved. Mechanization must be maximized; automation must inevitably come to pass. For example, if the scientist in writing his paper furnishes key descriptors, it will be possible for programmers to feed the new material into a central computer in a way which will permit ready retrieval. Now, if all information discovered by scientists were of equal value, total computer mechanization would be the obvious solution of our problem. What is needed about any subject under investigation, however, is not all of the information but the best information—as was recently pointed out by John R. Pierce of the Bell Telephone Laboratories.

In using the analogy of society to the brain, we must remember a third aspect: the brain's evaluative and integrative functions. Knowledge and understanding cannot be recorded on punch cards and retrieved satisfactorily by automation; evaluation by competent scientific reviewers is required. Responsible writers should provide independent analyses and judgment of scientific issues which, because of the paucity of news coverage and complexity of the scientific and technological material, the general public, legislators, and administrators are unable to understand.

Science and technology are coming to rank with politics, economics, and foreign policy in shaping our lives. References to the problems of pesticides and other agricultural chemicals—some of which might have carcinogenic or other noxious effects—detergents, food additives and drugs, fluoridation, mass immunizations, and effects of fallout, illustrate the range of subjects on which the general public, as the final authority in democracies, must make decisions without adequate informational background.

Interdisciplinary Groups

The importance of a multidisciplinary approach to the investigation of problems of wide scope and significance is now widely recognized. The life sciences, for example, are being grouped in many leading universities in such a manner as to constitute giant centers of interdisciplinary teaching and research. Here are the places which may train not only scientific investigators and teachers but also the new kinds of scientists whose task will be assimilation of new research and communication of its content and import to other scientists, to government and industry, and to the general public. Again we should remember the retired professor as a valuable potential in these developments.

A type of center which may prove of prime significance in information transfer and retrieval is the so-

called "Invisible College." It consists of a limited group of extremely competent scientists working in fast-moving fields, keeping one another informed of most recent results by telephone, grapevine, visits, and small, closed symposia. This may well prove a natural and spontaneous answer to the problems of quick analysis, integration, and capitalization of scientific originality.

Aspects of molecular biology, such as molecular genetics and molecular immunology, have had their invisible colleges, and I would like now to cite as a prime example the invisible college being developed by the fusion of molecular and systems-type neuroscientists. Its case history may be enlightening.

Modern Neuroscience

In view of developments of the last 25 years, it is clear that the ultimate problem for science is not that of atomic energy, secrets of outer space, or even health and disease, but rather of the equipment which generates science by which all such other discoveries are made and evaluated, namely the mind itself. Brain and mind are the greatest triumph of mass-data storage, processing, and retrieval known.

Despite the information explosion in recent years in the behavioral and social sciences as well as in neurophysiology and related neurosciences concerning normal and abnormal brain function, our understanding of the actual mechanisms of memory, learning, and cognition is pathetically primitive. It is comparable, perhaps, with Nineteenth Century physics before the advent of knowledge about subatomic particles, high-energy radiation, relativity, and quantum theory. Is it possible that, in addition to the electric action waves coursing through unfathomably complex neuronal nets, other altogether unknown processes may be occurring to produce a new and "strange system"? Can the human mind develop concepts and tools capable of discovering the mechanism of its own functioning? This question is beginning to interest not only pioneering neuroscientists but theoretical physicists and chemists as well.

The great success story of modern life science is the proof that our heredity, the genetic memory of the species, is conveyed in a molecular code in the nucleic acid macromolecular polymer, DNA. This process is not directly visualizable as part of everyday experience; the large numbers of code combinations involved, like those of astrophysics and the national debt, have reality only in mathematics, not in experience. Yet the polymeric molecular code hypothesis has shattered the seemingly impregnable mystery of human heredity.

Would it not now be profitable to inquire whether our personal memory and other components of cognitive function may also be coded in and upon the cells and networks of the brain, and whether mental function may involve storage, through experiential processes, of acquired information through selected codes, and their processing and retrieval in conscious and unconscious processes whose nature remains totally unknown? In short, are we not ready as molecular scientists to pass from molecular genetics and molecular immunology to molecular neurology?

The matter is, of course, not that simple. Reactions coded either by small molecules elaborated at synaptic junctions or by macromolecules may be the basis of

long-term memory and of the componentry of the mental computer, but cognitive, mindlike processes are typically *systems* phenomena. They are the province of neuro-anatomists, neurophysiologists, psychologists, and psychiatrists. Each of these disciplines is forbiddingly complex, requiring a lifetime of diligent work to master. Little wonder, then, that the individual neurosciences seem myopic, with little tendency to interact closely with the other neurosciences! If this rather parochial, highly specialized tendency could be overcome by arranging a close interaction between representatives of all the neurosciences together with creative thinkers from other sciences and technologies, perhaps the problem of the mind would yield to a determined and combined onslaught.

The Brain As Model

To implement such an attack, an invisible college called the Neurosciences Research Program (NRP) has been activated and made "visible" in Boston. Some 30 scientists representing 15 disciplines and 25 universities and research institutions here and abroad have banded together to share a common goal: to bring the knowledge and the insights of their special fields to bear on the multifaceted problem of human brain function. As a result, the new group resembles the highly developed human brain:

It applies many different kinds of knowledge to the problem it has set itself—in this case, appropriately, discovering where and how the brain codes, stores, and reads out what it learns.

The Neurosciences Research Program next resembles the brain in that it gathers data widely and rapidly. The Associates obtain evaluated information quickly from various areas of the fast-moving field of brain research. This is facilitated by visits and reports sponsored by the program and by frequent telephone calls. Their data-retrieval efforts—individual, "invisible college," and institutional—are augmented by the program's own professional science information staff and by special symposia on hot subjects—symposia called Work Sessions.

A Work Session is a two-day meeting on a subject identified as significant for the neurosciences, chaired and organized by an Associate of the program, and participated in by world leaders of research in the area of interest. The proceedings are summarized and evaluated, and the consensus, if one is achieved, is spelled out.

The NRP, like a brain, interprets and evaluates the retrieved data, by having each Associate periodically brief the others on advances in his field. At regular Stated Meetings, Associates instruct one another through tutorial lectures and communicate research results from their laboratories and elsewhere.

Possibly the most valuable product of the program's activities is originating new researches generated by discussions at the Center and carried out at the laboratories of the Associates' home institutions, for, again like a brain, which directs work done at a distance, by peripheral effectors, the NRP leaves the doing of the actual experiments to other organs, namely the Associates home institutions.

(Concluded on page 40)

An Embryonic Computing Utility

The MAC system now being developed at M.I.T. suggests how machine help may be distributed

J. C. R. LICKLIDER of the Advanced Research Projects Agency of the Department of Defense has pointed out that making use of a modern computer's services is comparable to harnessing nuclear energy. Such a machine's help often can be provided most economically in greater amounts and at faster rates than people require it. The Department of Defense, therefore, is supporting efforts to find ways to make a big computer's services attainable in suitable amounts whenever and wherever those services can be most helpful.

A big, fast digital computer can hold more than a hundred million numbers and carry out more than a million instructions per second. A single machine consequently is often capable of serving a good many different people simultaneously. This can be done by means of a Compatible Time-Sharing System that was developed in the M.I.T. Computation Center.

From 40 desks now, M.I.T.'s professors, students, and researchers can dial an IBM 7094 for help, and get it quickly. They can put all sorts of data into the machine, retrieve it later when they need it, and order the machine to perform tedious tasks for them at any hour of the day or night. Different users can converse with the machine in different languages, and utilize its help in different ways. A first step has been taken, in

other words, toward making the use of a big modern computer almost as convenient as telephoning to consult a friend.

This embryonic computing utility is still growing. Its operators hope further to increase its usefulness by both making its services still more widely available and by making the machine more truly responsive to human needs. Their goal is Machine-Aided Cognition. Their principal tool is a Multiple-Access Computer. Hence their project is called MAC.

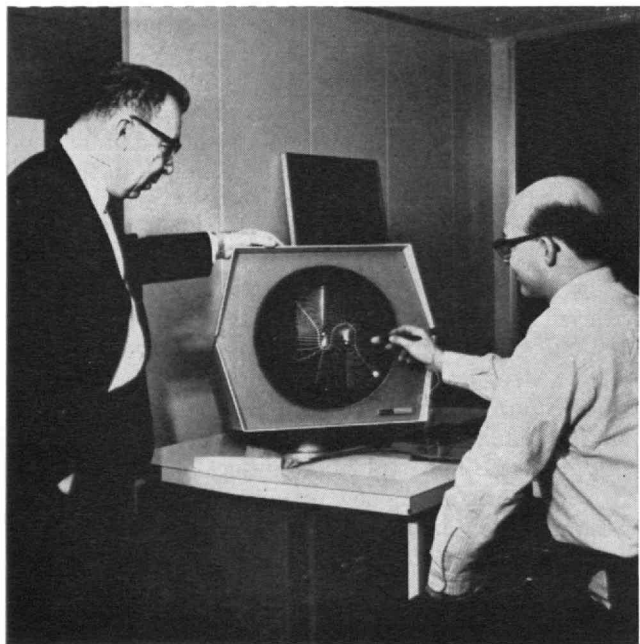
Its Director, Professor Robert M. Fano, '41, believes that computing service ultimately can be made as readily and widely obtainable as electrical energy is now. He expects smoother ways of coupling the imagination, insight, and judgment of a human being with the tremendous capabilities of a computer to be developed. These, he thinks, will lead to much more use of computers in the future and accelerate progress in a wide spectrum of human activities. But, he emphasizes, many obstacles remain to be surmounted, and he hopes the nature of these difficulties will be clarified by study of the operation of the MAC system.

A New Computing Hub

Project MAC was officially launched last summer when the Office of Naval Research awarded a \$2,220,000 contract to M.I.T. on behalf of the Advanced Research Projects Agency. Professor Fano's Associate Director is Oliver G. Selfridge, '45, and his Assistant Director for Administration is Richard G. Mills, '54. MAC's staff of 80 persons now includes many of the Institute's foremost authorities on computers, on languages used in dialogues with them, and on future potentialities of such machines. These people and an impressive array of equipment now occupy the top two floors of the new Beta Building in Technology Square.

A specially modified IBM 7094 installed there last fall can be operated from Teletype machines elsewhere, the same way that a similar computer in the M.I.T. Computation Center in the Compton Building has been used for many months. (The drawing at the right shows the location of 40 such Teletypes and the two 7094's to which they can be connected by dialing through the Institute's telephone system.) In addition to the 40 Teletypes now in use, 16 IBM electric typewriters soon will be connected similarly to the MAC system. Later this year, too, this system will be connected to the American Telephone and Telegraph's TWX and Western Union's Telex systems and become operable from any terminal of those networks.

(Concluded on page 42)



Professor Fano and Associate Professor Marvin L. Minsky examining a graphical display produced by the PDP-1.

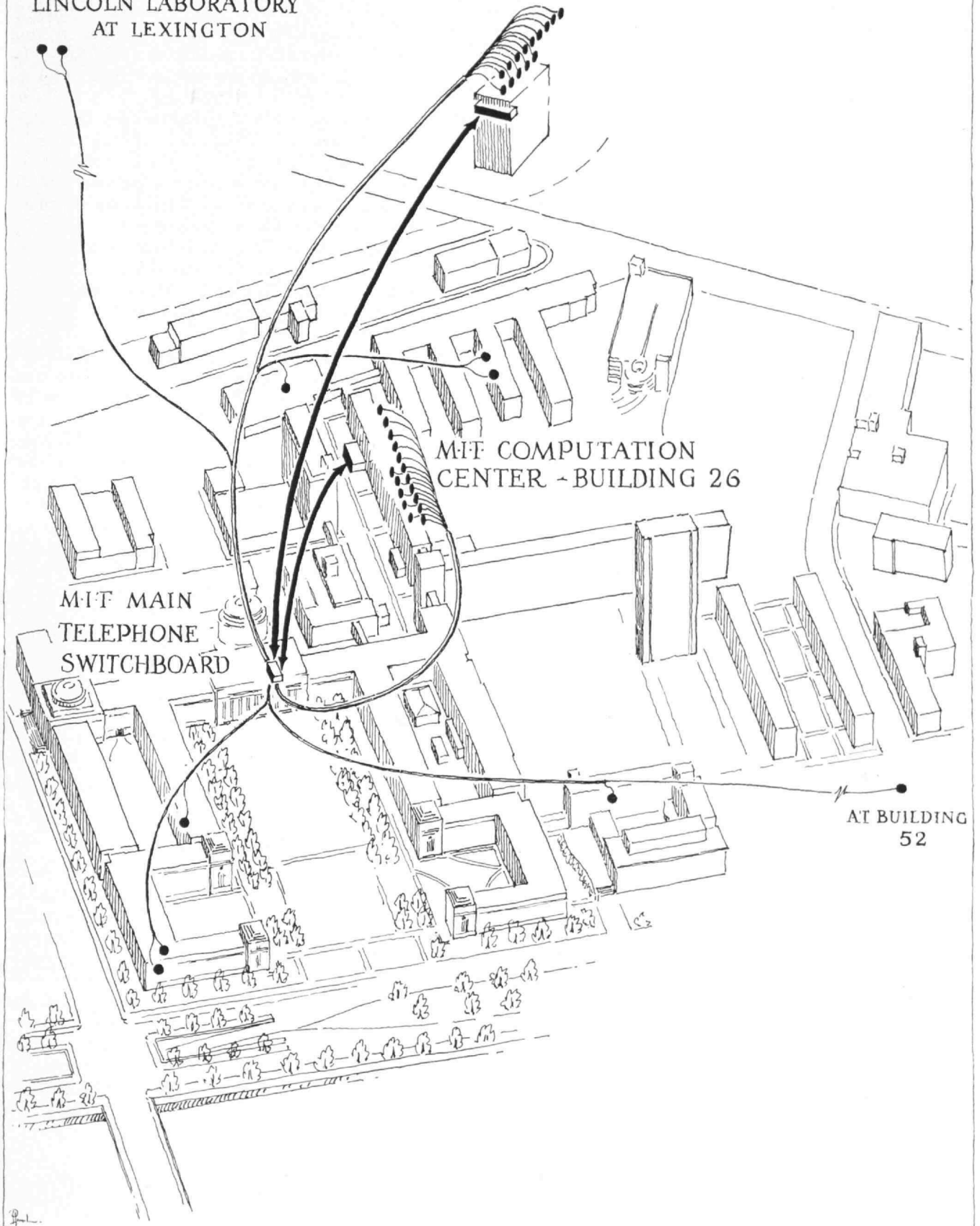
PROJECT MAC
TECH SQUARE BUILDING

LINCOLN LABORATORY
AT LEXINGTON

MIT COMPUTATION
CENTER - BUILDING 26

MIT MAIN
TELEPHONE
SWITCHBOARD

AT BUILDING
52



Trend Of Affairs

In the M.I.T. Libraries

TO COPE with the unprecedented expansion of scientific and technical literature and the rising demands on the M.I.T. Libraries, President Julius A. Stratton, '23, has announced that:

► Professor Carl F. J. Overhage, Director of Lincoln Laboratory for the last seven years, has given up that position to initiate and direct a long-range study of the problems confronting libraries, and

► Professor William N. Locke, who has headed the Department of Modern Languages since 1945, will give up that position on July 1 to devote all of his time to the management and development of M.I.T. libraries.

Professor Overhage will undertake to establish the bases on which the technical library of the future may be modeled. He will consider application of the principles and methods of information processing to library operation. He hopes to bring together, at an early stage of the project, an outstanding group of scholars to study the problems for several months and define the scope and goals of subsequent research. The ultimate objective will be the functional design of a library of science and engineering to be put into operation at M.I.T. between 1970 and 1975.

"This is clearly a challenging problem," President Stratton said, "and I believe that M.I.T. can provide an especially favorable environment for the development of new concepts of the nature and function of technical libraries, and for experimentation with new forms of library services."

An alumnus of the California Institute of Technology, Professor Overhage was a group leader in the M.I.T. Radiation Laboratory during World War II, and was associated later with the Eastman Kodak Company. He is a Fellow of both the American Physical Society and the American Academy of Arts and Sciences.

Professor Locke became director of the M.I.T. Libraries in 1956. Since then the number of library users has increased nearly 10 per cent a year and the staff has been nearly doubled. He will be concerned not only with library operations but also with plans and policies to resolve the difficult problems created both by the increasing use and the rising volume of scientific and technical literature.

An alumnus of Bowdoin who received his doctorate at Harvard, Professor Locke taught at Harvard, the French Ecole Normal de Montbrison in Loire, and other institutions before coming to M.I.T. He helped to begin work in mechanical translation at the Institute and recently initiated a nationwide project in language education by television and films. Through his efforts the translation of three Russian electronics journals has been undertaken and one of the nation's leading collections of Chinese technical journals has been assembled at the Institute.

Computers and the Library

NUMEROUS WAYS in which data-processing techniques and machines can help libraries store information and make it readily accessible were described at an M.I.T. Industrial Liaison Symposium in January on "Computers and the Library." Professor William N. Locke was chairman and more than 100 persons attended.

The flood of new books now, Professor Philip M. Morse noted, is simply too great for libraries to store them in the splendor of the past. To be of optimal value, a scientific and technological library must be kept pruned. The probability of future calls for a book, he showed, can be determined mathematically from data regarding previous calls. Means are available, he said, for libraries not only to find out which books can be retired with the least inconvenience to patrons but also to learn more quickly which ones are in such demand that duplicate copies should be ordered.

Professor Michael P. Barnett, Director of the Co-operative Computing Laboratory, described the use of a Flexowriter, an IBM 709, and a Photon machine to produce and update printed matter; and Richard L. Snyder, Associate Director of Libraries, described a simplified data processor to produce catalog cards.

The MAC system that is now making a large computer's services available throughout M.I.T. was explained by Professor Robert M. Fano, '41 (see page 16), and demonstrated in operation by Myer M. Kessler, '39, Director of the library's technical information project. Dr. Kessler has stored records of 30,000 papers printed in *The Physical Review* and other physics journals in an IBM 7094, and had a Teletype on the Kresge Little Theater stage connected to that machine. With it, he showed how quickly requests for the titles, authors, and locations of those papers could be answered.

Assistant Professor Dwight M. Baumann, '57, recalled the observation that the scientific community, like a giant squid, squirts out clouds of ink while traveling backwards—and discussed substitutes for old-fashioned books. Information now can be stored more compactly by photographic and electronic techniques than by Gutenberg's method, he observed; and he concluded the symposium by describing an automated system to enable a person to obtain whatever information he might want from a library without ever leaving his office.

Communicating Technical Information

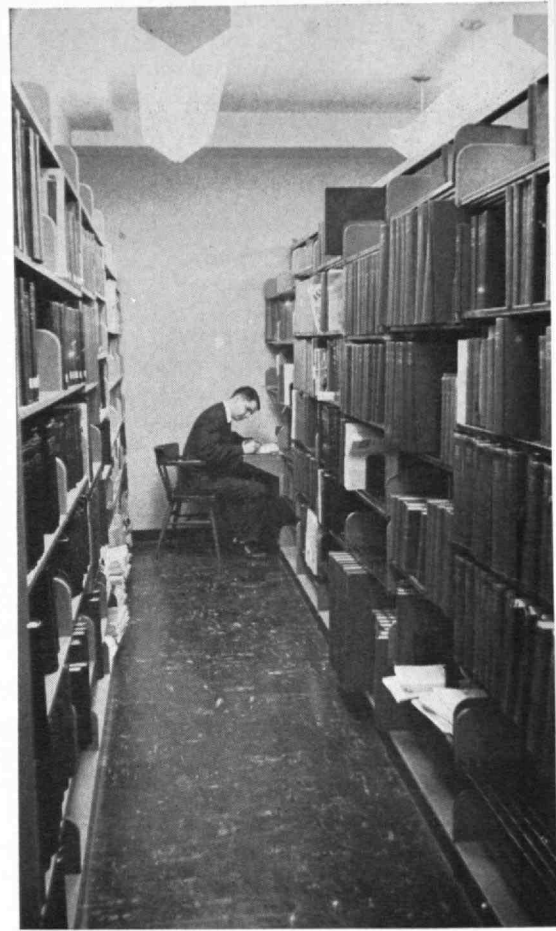
THE FREQUENCY at which technical people are called upon to disseminate their ideas outside their immediate specialties has been steadily increasing since World War II. Engineers and scientists now must communicate not only with management and other nontechnical groups but also with the public.

This year, the Department of Humanities is offering a summer program that will concentrate on ways to solve the many problems of communicating technical information to nontechnical audiences. Oral and non-verbal techniques will be investigated as well as technical writing. Media to be analyzed will include proposals, magazine articles, news releases, conferences, briefings, and interviews.

Anyone actively engaged in presenting technical information, either orally or in writing, may enroll. This program will run from June 22 through June 26.



Professors William N. Locke (left) and Carl F. J. Overhage were photographed during the recent Industrial Liaison Seminar on libraries. They will be much concerned with the future of the M.I.T. libraries, glimpses of which are seen here and on *The Review's* cover this month.



An M.I.T. Symposium in Ohio

A NEW KIND of Regional Alumni Conference will be held on Saturday, March 7. The M.I.T. Association of Cleveland will then present a symposium on "The Edge of Tomorrow," to which secondary school principals, teachers, and guidance counselors as well as Alumni have been invited. It will be M.I.T.'s first Regional Alumni Conference since 1959, and the first one to feature a program of special interest to representatives of the region's secondary schools as well as Alumni.

The symposium will be preceded by a lunch at which President Robert H. Winters, '33, of the Alumni Association will speak, and followed by a dinner to be addressed by Chairman James R. Killian, Jr., '26, of the M.I.T. Corporation.

Speakers during the afternoon will include Dean Emeritus George R. Harrison of the School of Science, on "The Scientific Origins of Modern Engineering"; Professor Irwin W. Sizer, Head of the Department of Biology, on "Science That Could Change Our Times"; and Professor Holt Ashley of the Department of Aeronautics and Astronautics, on "A New Look at College Curricula in Engineering and Science." Their addresses will be followed by a panel discussion.

In the forenoon, the M.I.T. Educational Council will sponsor a special presentation for the high school teachers and guidance counselors. The day's program will bring together secondary school leaders from as far west as Toledo and as far east as Erie, Pa. They will hear Robert J. Holden, Associate Dean of Student Affairs, describe "The M.I.T. Student and His Environment"; Professor Roland B. Greeley, Director of Admissions, discuss "Admission—A Co-operative Process," and Jack H. Frailey, '44, Director of the Student Aid Center, explain "Student Aid—The How and Why of Scholarships, Loans, and Jobs." Time will be allowed, too, for questions.

Donald D. Scarff, '41, General Manager of General Electric Company's Lamp Division at Nela Park, will be general chairman of the conference. All sessions will be in the Mid-Day Club in the Union Commerce Building, and Alumni will begin registering at 11:30 A.M. The luncheon will be at 12:30, the symposium at 2:30 P.M., a reception at 5:45, and dinner at 6:30. Symposium tickets will be \$25 per couple, \$15 per person, including meals. Reservations may be made with Bruce A. Lamberton, 1705 Superior Building, Cleveland.

Where the Faculty Lives

TO NOTE where and how the M.I.T. Faculty and staff now reside, and why, the Faculty Environment Committee last year sent out 3040 questionnaires. The M.I.T. Planning Office now has summarized 1528 valid replies, and reported that:

► The homes of the men and women on the Institute's staff are concentrated in Cambridge, Boston, and communities along Routes 2, 9, and 3.

► Fifty-seven per cent of the respondents own their homes (although 83 per cent of those who live in Cambridge are renters) and these homes are predominantly single family dwellings.

► Professors have settled in the older suburbs; instructors are more numerous in and near Cambridge, and assistant and associate professors tend to spread farther out.

► Those in Cambridge are mainly the younger, single, and childless people; all but 7 per cent of the children accounted for live outside of Cambridge.

► Sixty-eight per cent of the respondents commute to work in their own cars, 7 per cent are in car pools, 7 per cent walk, bicycle, or ride scooters, 5 per cent use public transportation, and the rest sometimes travel one way and sometimes another.

The survey revealed that many members of the academic staff who now live in Boston, Belmont, Lexington, Arlington, Brookline, Newton, and other communities would like to live in Cambridge. Those, already living in Cambridge, under 25 years old and those more than 40 years old are most inclined to want to remain close to the Institute. Good public schools is the most important reason given by respondents for living where they do, and nearness and access to M.I.T. the second most important. Sixty-five per cent of the respondents presently in Cambridge and 20 per cent of those now living outside of Cambridge think an Institute-sponsored program to provide housing for the M.I.T. staff in Cambridge would be a good idea.

The Second Alumni Seminar

PRESIDENT Julius A. Stratton, '23, has made Dean Emeritus George R. Harrison chairman of a committee to plan the program for the second M.I.T. Alumni Seminar next September 12, 13, and 14. An Alumni Officers' Conference to precede it, September 11 and 12, is being planned by a committee headed by Samuel A. Groves, '34.



Holt Ashley



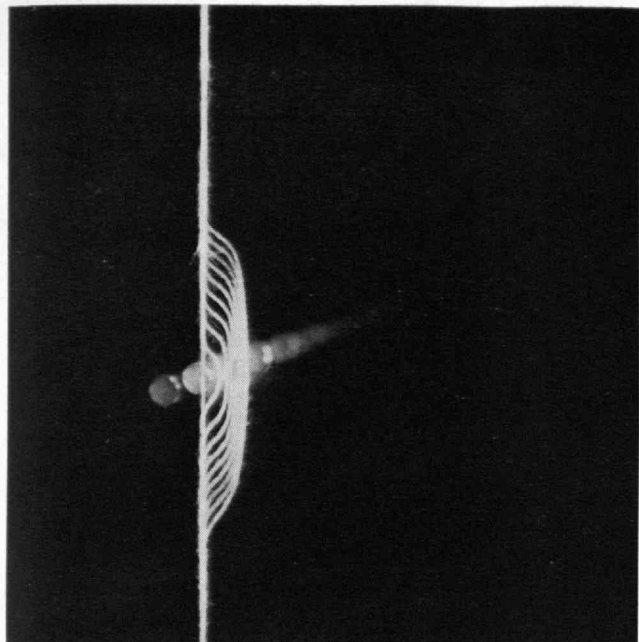
Roland B. Greeley



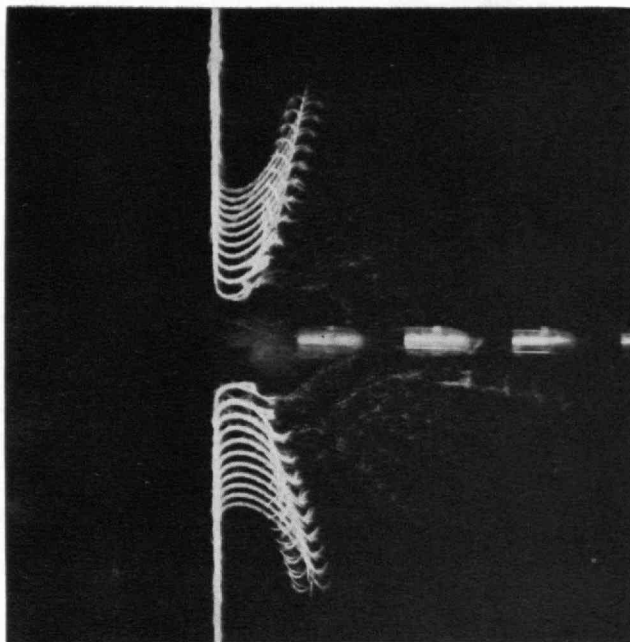
Jack H. Frailey, '44



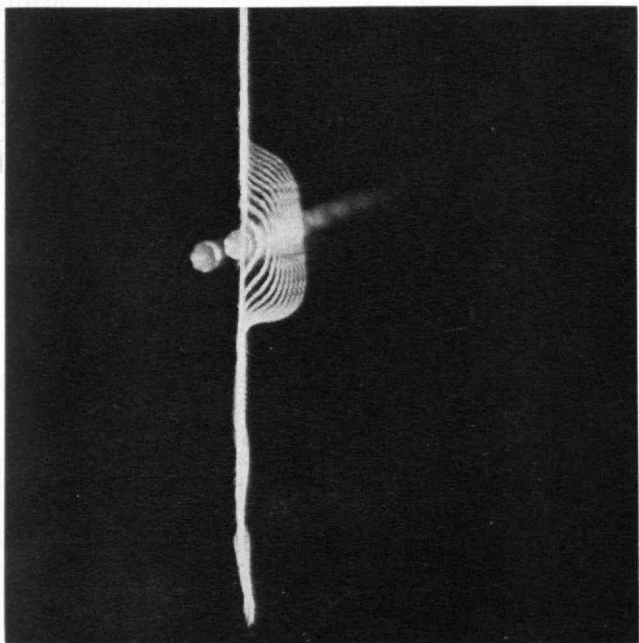
Robert J. Holden



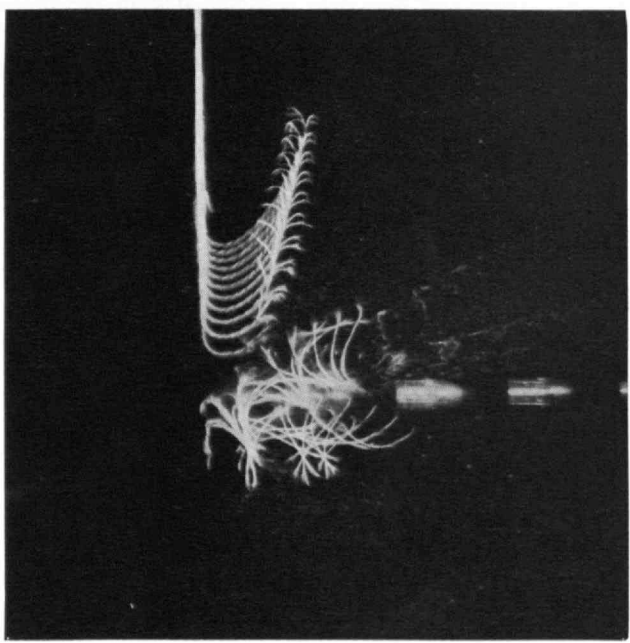
A taut string grazed by a bullet . . .



A taut string severed by a bullet . . .



A loose, dangling string grazed . . .



And a loose string snipped off.

THESE MULTIPLE-FLASH PHOTOGRAPHS show the effects of a .22 caliber bullet on a piece of string. John Carson, '63, made them at 20,000 cycles per second, during experiments in the M.I.T. Stroboscopic

Fermentation Technology

THE ANCIENT ART of fermentation figures importantly in the production of both many of our oldest foods and some of our newest pharmaceuticals. Even so, current knowledge of biological processes and engineering has not been used as advantageously as many scientists think that it might be in fermentation technology.

For chemists, engineers, and microbiologists wishing to review fundamentals and update their understanding of the processes involved, M.I.T. will offer a special one-week course next summer in fermentation technol-

Laboratory, over which Professor Harold E. Edgerton, '27, presides. For a quarter of a century (see "Institute Yesteryears," page 34), Professor Edgerton's lights have been yielding striking pictures of commonplace things.

ogy. It will deal with such topics as growth and metabolism, applications of physiology and genetics, kinetics and continuous culture, mass transfer and scale-up, and new fermentations.

Richard I. Mateles, '56, Assistant Professor of Biochemical Engineering, will be in charge of this program, and the lecturers will include Cecil G. Dunn, '30, Associate Professor of Industrial Microbiology; Boris Magasanik, Professor of Microbiology; and Arthur E. Humphrey, '60, Head of the Department of Chemical Engineering at the University of Pennsylvania.

Scoring Weather Forecasts

CAN the weathermen's forecasts be judged without luring them away from scientific tools into gamesmanship?

When forecasts are checked simply by comparing them with the weather that occurs, the forecasters can hedge by taking climatic conditions into account and, with a little bit of luck, can maximize their scores at the expense of their forecasts.

A different system is used to judge "forecasting derbies" at M.I.T., and Associate Professor Frederick Sanders, '54, discussed it during a verification symposium at a recent Los Angeles meeting of the American Meteorological Society. This system is mathematical, and based on one worked out by Glenn W. Brier of the U. S. Weather Bureau. Dr. Sanders reported that it apparently rewards meteorological skill, penalizes ambiguity, trickery, luck, and human stubbornness, and cannot be "played" like most other systems.

The Brier scoring system calls for probability forecasts rather than categorical forecasts, and the forecasters compete against the climatological norm. In the M.I.T. "derbies," the participants make four forecasts for each 24-hour period—one four days, one three days, one two days, and one only a single day in advance. They are graded on how much better they do than the climatological score.

Sometimes a meteorological change will occur on Wednesday that will make the forecasts made for Thursday on the previous Monday or Tuesday unattractive. "In this circumstance," says Dr. Sanders, "there is a psychological pressure to recoup by reversing the direction of the forecast with a vengeance. It seems not unlikely that these forecasts representing agonizing reappraisals are biased opposite to the direction of the earlier forecasts. Still, individuals vary and with some in these same circumstances the subconscious desire seems to be to go down with the sinking ship, all guns blazing."

The Brier score, Dr. Sanders said, provides a measure of skill in two aspects of subjective forecasting: sorting forecasts into categories of likelihood of occurrence, and labeling the categories with the probability of occurrence.

Cigarettes and Cancer

DRS. EDWARD P. RADFORD, JR., '44, and Vilma R. Hunt of the Harvard School of Public Health drew attention in January to radioactive polonium in cigarettes and suggested that it may be involved in the production of lung cancer. They have found small amounts of Polonium ²¹⁰ in tobacco as a natural contaminant which "may constitute a significant initiator of neoplasia (abnormal growth) in the bronchial epithelium of a cigarette smoker." Their research was reported in *Science* and explained on M.I.T.'s educational TV program.

Dr. Radford has attributed his contribution to the study of smoking to a confluence of scientific interests. As an undergraduate at the Institute he concentrated on mathematics and biology. He worked for a while for the Polaroid Corporation and later for E. I. du Pont de Nemours & Company, and was a member of a radiological safety unit at Eniwetok. Since 1959 he has been associate professor of physiology at the Harvard School of Public Health.

Across-the-Board Engineering

SUPPOSE three men were stationed on the moon, and you wanted to replace one of them each month. How would you do it? Fourteen M.I.T. undergraduates studied this problem last term. They evaluated plans for rendezvous near the earth and near the moon; for nuclear and conventional rockets, for air-breathing boosters, and for winged and ballistic re-entries to the earth's atmosphere. They considered mission costs from the time of launching to retrieval—which ran from one to two billion dollars—and each student recommended a different solution.

Professor Rene H. Miller lectured to them on systems analysis and orbital mechanics, Associate Professor Jack L. Kerrebrock on propulsion, and Associate Professor John Dugundji, '48, on aerodynamic heating. North American Aviation's Vice-president for Advanced Systems, William R. Laidlaw, '51, and the same company's assistant chief engineer of the Apollo Project, John F. McCarthy, Jr., '50, contributed two lectures and several hours of discussion with the students.

The purpose of this exercise, says Professor Miller, was to emphasize to the students the across-the-board activity of an engineer, to show them the application of theoretical knowledge stressed elsewhere in their curriculum, to give them a glimpse of the interplay of specialties in actual decisions regarding specific missions—and thus, hopefully, to prepare them better to assume executive responsibility as professional men.

The Department of Aeronautics and Astronautics now offers two Space Systems Engineering exercises each year, one for undergraduates and one for graduates. The latter are concerned this term with establishing an orbiting astronomical observatory.

Operations Research in Marketing

NEW quantitative methods in marketing will be discussed in one of M.I.T.'s special summer programs, beginning September 8. Direct measurement of sales response to marketing activity by designed experiments has yielded valuable information to advertisers, and the basic ideas involved, the accuracies attained, and current limitations of the technique will be considered. The program will presuppose mathematical experience equivalent to a course in calculus and knowledge of elementary probability and statistics. Associate Professor J. D. C. Little, '48, will be in charge and the staff will include Associate Professor Ronald A. Howard, '55; Assistant Professors Arnold E. Amstutz, '58, and Henry J. Claycamp; and Jerome D. Herniter.

New Glass Compositions

AT THE American Physical Society's January meeting in New York, S. Donald Stookey, '40, Director of Fundamental Chemical Research at the Corning Glass Works, described a new kind of glass which darkens on exposure to light and clears again when the light fades. The photochromic materials that he and William H. Armstrong have produced, he said, are still in the laboratory stage but are to his knowledge the first ones to retain indefinitely the ability to darken quickly and then clear. In previous materials, the reversibility quality wore off or the color change took a long time.



Far Infrared Spectroscopy

THE ENTRANCE to M.I.T.'s Spectroscopy Laboratory is through the basement of Building 6, past two imposing sets of double doors. Beyond them is a pit and a stairway leading up to a balcony from which one enters that part of the laboratory where infrared studies are done. A heavy chain pulley hangs from the ceiling down into the pit. The floors have been built up with layers of cork and concrete to reduce mechanical vibration and the room is filled with special apparatus.

Here Professor Richard C. Lord and Assistant Professor Clive H. Perry are conducting a quiet set of experiments that the latter described in part at a recent Research Laboratory of Electronics conference. These experiments deal with the properties of certain materials in the far infrared (50 to 1000 microns) portion of the spectrum. In this region, which is immediately adjacent to the millimeter part of the microwave spectrum, the properties of materials have hardly been investigated, largely because of technical difficulties.

Much of Lord and Perry's work has been concerned with the design of detection devices capable of recording infrared resonances in perovskite titanates, anti-ferromagnetic materials, ferroelectric solids, inorganic compounds with low internal molecular and lattice vibrations, and in gases.

A far infrared spectrometer currently in operation has a light source in the shape of a medium-pressure mercury discharge lamp, an optical maze of close to 20 reflecting surfaces, a rather flexible sample area capable of accommodating solids, liquids, or gases for investigation, and two sorts of detectors. One of these, a Golay detector, is designed to operate at room temperature. The other is a low-temperature bolometer in a large tubelike affair with special polyethylene and quartz filters to remove radiation below 40 microns, thereby eliminating interference from background radiation emitted by nearby objects at room temperature. By cooling this detector down to temperatures only a degree or so above absolute zero with a liquid helium cryostat, Lord and Perry have found that more satisfactory measurements are often attainable.

PRESIDENT JOHNSON and Professor Jerome Wiesner (at far left) are shown above at the White House with the five 1963 recipients of National Medals of Science. Those honored were (left to right) Institute Professor Emeritus Norbert Wiener of M.I.T., John R. Pierce of the Bell Telephone Laboratories, Vannevar Bush, '16, of M.I.T., Cornelius B. van Niel of Stanford University, and Luis W. Alvarez of the Lawrence Radiation Laboratory at Livermore, Calif.

Essentially the spectrometer operates by passing light from the mercury discharge lamp through the maze of reflecting surfaces and filtering out unwanted radiation. This light is passed through the sample under study and sent on to one of the two detectors. The resulting spectra are then recorded automatically.

Since radiation of all frequencies save those actually transmitted or reflected by the sample must be eliminated, the filtering is the most critical step in the operation. The construction of Lord and Perry's device points up the importance of reflection-type filters in performing this task. Thallium bromide filters, for example, have been found effective in removing radiation below 90 microns while maintaining high reflectivity throughout the 90- to 200-micron region.

Lord and Perry not only use filters with such properties but also have constructed their spectrometer so that it can be evacuated to remove water vapor that absorbs very strongly in the far infrared region.

Thus far, infrared spectra of perovskite-structured materials (among them the titanates of calcium, strontium, and lead) have been observed both in transmission and in reflection in the 2.5 to 330 micron region. The resulting spectra reveal a number of absorption bands that have been interpreted as frequencies of the normal modes of vibration of these materials.

Lord, Perry, and their colleagues have observed infrared active vibrations which were not previously reported. Their work is being extended now to other solids, as well as liquids and gases, and should reveal much more than is now known about the properties of materials in this little explored part of the spectrum.

New Books

MY YEARS WITH GENERAL MOTORS, by Alfred P. Sloan, Jr., '95, edited by John McDonald with Catharine Stevens (Doubleday and Company, Inc., \$7.95).

REVIEWED BY HOWARD W. JOHNSON
Dean of the M.I.T. School of Industrial Management

THE MANAGEMENT of men and resources has drawn on the best of society's talents through the centuries, yet the general theory of management remains to be developed. As in other broad fields of human endeavor—engineering, politics, and medicine, for example—the practice of management at any given time goes beyond the proven theory. We have finally assigned the proper heavy weighting to the contribution of the entrepreneur-manager in his role of mobilizing capital and labor. We are finally aware of the importance to society of developing men who can function effectively in these assignments. There is, of course, a growing body of ideas, concepts, and analyses of great use to students and practitioners alike, but there remains a notable void. We still do not fully understand the process of enterprise management as exemplified by the task of the chief executive officer of the modern corporation. To him fall the large problems that demand for their solution a combination of consistency and audacity, intelligent analysis



Mr. Sloan, as pictured on the book jacket.

A Contribution to

and vision, energy and courage. We have had little illumination of this pivot in the management function. Businessmen either have not written their memoirs, as do generals and politicians, or when they do, their books have most often dealt with a level of reminiscence that avoids their fundamental role in management. Now, finally, in Alfred P. Sloan's [95] new book we have a brilliant exposition of the function of the chief executive told in the operating context of the world's largest and most profitable corporation.

My Years with General Motors is a monumental addition to the understanding of the process of executive management. The book is, first of all, as the author says, "a personal account" of his decisive part in the rise of General Motors. It is a good deal more than that. The book is an important piece of American history, detailing with precise strokes the development of the automobile industry in the United States. Most important, however, I believe the book will be remembered in the long run as a basic contribution to the science and art of management as presented by a principal developer of modern corporate management theory. As Mr. Sloan puts it: "The area in General Motors that I have staked out for this book is one that is not usually visible. It extends from the board of directors to the producing divisions, and consists of the general administration, the executive officers, the policy committees, the line and



An auto windshield in 1909.

the Science and Art of Management

staff organization, and the interactions between the producing divisions; in other words, the area in which the part contributes to the whole and the whole to the part." In this sense, the publication of the Sloan book is a major event in the literature of management. "Management has been my specialization," says Sloan in his introduction and proceeds to describe the theory and action of his specialization in the chapters that follow. The book will be read with profit by managers and management students for a long time to come.

Sloan's book begins with a picture of the automobile industry's position in the pre-World War I days. He describes the founding of General Motors by William C. Durant in 1908, its initial successes, and the hurly-burly competition and confusion that existed in an industry dominated by Henry Ford and the Model T. The great names of the automobile world were already on the scene—Ford, Buick, Olds, Chevrolet, Chrysler, and Nash. Sloan, himself, had come "of age at almost exactly the time when the automobile industry came into being." He was graduated from M.I.T. at the age of 20 in 1895, the year the Duryeas had begun to build the first gasoline automobiles in the country. Sloan's first job was with the Hyatt Roller Bearing Company, of which he soon became general manager. He had, although he didn't know it at the time, "entered one of the headwaters of General Motors," for in 1916 Hyatt became part of

Durant's United Motors, of which Sloan became president, and in 1918 United Motors became part of General Motors.

The affairs of General Motors had reached a crisis level bordering on panic in post-World War I. Durant's management, brilliant in parts but uneven and essentially uncontrolled, had left a company in which overruns in capital appropriations were commonplace, inventories were out-of-hand, and cash desperately short. The resulting storm brought Alfred Sloan to a key position in the top management of General Motors and to its presidency in 1923. Sloan was then, at 48, on the eve of the greatest period of his career. He had around him "the greatest team of experienced and promising automobile and financial men": Kettering, Brown, Pratt, Bradley, Keller, Knudsen, Mott, and others. He also had an intense personal drive to accomplish great things. "As to myself, I recognized that my election to the presidency of the Corporation was a big responsibility and a business opportunity that comes to few. I resolved in my own mind that I would make any personal sacrifice for the cause, and that I would put forth all the energy, experience, and knowledge I had to make the Corporation a success." The rest of the story is now known. Sloan developed the concept of the modern corporation that has left its stamp on the operation of most major companies today. *(Continued on next page)*



Weathering a blizzard in Times Square in the early 1900's.

The concept can be stated briefly as co-ordinated control of policy at the top and decentralized responsibility for operations down the line. But if this principle is now easily stated, making it work called for the best in organization, analysis, and leadership. Sloan deserves great credit for elucidating the principle, but he and his associates deserve greater credit for the remarkable web of operating mechanisms they developed to make the system work. The most famous of these was the committee system of the Board: the interdivisional relations committees to insure co-ordination to the functions of purchasing, sales, and engineering; the Operations Committee, which included the general managers, to appraise the performance of the divisions; the Executive Committee to make policy for all but dependent on the Finance Committee for large appropriations. These committees did not supervise or second guess the general managers responsible for operations. These men, motivated by opportunity and rewarded for performance, became the essential muscle of the General Motors body. The committee system was constantly changed and trimmed to secure the right balance of control. Sloan was thus occupied with the "development, organization, and reorganization of these governing groups." He was deeply concerned with "the natural tendency to erode the framework (for decisions) unless it is consciously maintained." It was this constant sifting and sorting of the power requirements of the system that is Sloan's unnoticed accomplishment. His review of the development of each of the parts of the theory and the testing of theory in practice are a major part of the book's contribution.

The description of the working out of the process of centralized and co-ordinated policy with decentralized operations is heavily interspersed with the philosophy of management that describes Alfred P. Sloan. Let him speak for himself.

On profit: "We presumed that the first purpose in making a capital investment is the establishment of a business that will both pay satisfactory dividends and preserve and increase its capital value. The primary object of the corporation, therefore, we declared was to make money, not just to make motor cars. Positive statements like this have a flavor that has gone out of fashion; but I still think the ABC's of business have merit for reaching policy conclusions."

On the role of the chief executive: "Decentralization or not, an industrial corporation is not the mildest form of organization in society. I never minimized the administrative power of the chief executive officer in principle when I occupied that position. I simply exercised that power with discretion; I got better results by selling my ideas than by telling people what to do. Yet the power to act must be located in the chief executive officer."

On the relation of theory to practice: "The concept (standard-volume) is a good illustration of our management philosophy of defining a soundly conceived theoretical reference to guide us in the practical management of our affairs."

On the integration of management: "So it was all of a piece. You started on a course with a policy and things not foreseen fell into place. When it came to the product, the policy meant continuous eternal change."

On control: "It was on the financial side that the last necessary key to decentralization with co-ordinated control was found. That key, in principle, was the concept that if we had the means to review and judge the effectiveness of operations, we could safely leave the prosecution of these operations to the men in charge of them."

On the demands on the executive: "... a rising successful economy like that of the United States is not only an opportunity, it is also very demanding on those whose ambition is to excel in it. Our performance has been demonstrated day by day in our production and distribution of goods useful to the community. I shall be glad for General Motors to be judged by this performance."

So Alfred Sloan's theory evolved. He salted this rational review on a grand scale with a constant searching for future trends. He knew that the distribution of the automobile had to be soundly based, and devoted great effort to the building of a dealership organization that had spirit and continuity. He saw the gap in the General Motors automobile line and pressed forward with the development of the Pontiac, representing the "first important advance in co-ordinating the physical product in manufacturing" in direct response to a market need—in a real sense, American mass production at its best. He foresaw the possibility of replacing the purely mass one-car market as developed by Ford with a "mass-class" market in which the consumer could make a wide choice based on his purpose and his price. Four new elements are associated with this new market developed by General Motors: installment selling, the used-car trade in, the closed body, and the annual model. The automobile public takes these elements for granted now, but each represented an innovation on a large scale at the time. After 1927, General Motors became the pre-eminent producer in the automobile market, and the Sloan concept became the concept of the industry.

Throughout the book, the Sloan approach to managerial decision making comes through and with it a glimpse of the style of the man—a coldly informed judgment, always seeking more facts, courage in the face of crisis, a general optimism for the future, a rational detachment that produces an elegance with simplicity. In describing John Pratt, Alfred Sloan could have been describing himself. "He had a great capability for handling large problems with plainness and simplicity. He could get to the point."

One would have wished more comment on the process of developing men to insure the continuity of the enterprise. One of the achievements of the General Motors system is the process of welding a large group of men together, of developing constructive competition along with competitive co-operation within the group. The sum is greater than the talents of the individuals who make it up. Perhaps in a second book, this new author can give us his views on this achievement in greater detail.

Characteristically, Sloan turns to the future at the end of the book. His closing words have general significance. "Each new generation must meet changes—in the automotive market, in the general administration of enterprise, and in the involvement of the corporation in a changing world. For the present management the work is only beginning. Some of their problems are similar



The author (left) in 1899 with his wife; Mr. Sloan, Sr., holding Raymond; Mrs. Sloan, Sr., Katharine, Clifford, and Harold.

to those I met in my time; some are problems I never dreamed of. The work of creating goes on."

Alfred P. Sloan's total contribution to the development of modern management cannot yet be assessed. We are too close to this giant. Others of his contempo-

raries put their names on car models. For Sloan, the stamp of contribution will be less obvious but clearly more important. The automobile industry will carry his impress as long as it exists. So will the field of management.

THE MODELING OF MIND—COMPUTERS AND INTELLIGENCE, by Kenneth M. Sayre and Frederick J. Crosson, Editors (Notre Dame Press, \$7.95).

Reviewed by Martin Greenberger,
Associate Professor of Industrial Management

ONCE upon a time, about one half generation ago, only the engineers who were developing the early prototypes found intellectual adventure in the world of computers. This collection of essays by two young philosophers demonstrates just how much the scene has changed since then.

Applied mathematicians and numerical analysts were probably the first to recognize the implications of the computer for their work. Business and military men, and others with massive data problems, were quick to follow. The field of information processing grew, especially in its analytical dimensions.

New professional fields drew nourishment from the advancing computer technology: computer program-

ming, most clearly, and also operations research, particularly its component areas of mathematical programming and dynamic simulation.

Then the computer played its first game of checkers, proved its first theorem, and composed its first musical suite. And suddenly it became proper intellectual subject matter in several of the more traditional university departments, among them physiology, psychology, and philosophy.

Whereas the early feats of the computer exhibited little more than sheer arithmetical and logical skill, the later accomplishments hinted at some obscure aspects of the human mind: deduction, problem solving, pattern recognition, learning, and even creativity. Scientists began to examine whether computer networks can suggest physical models for neural behavior on the micro level or, on an intermediate level, whether listing processing programs can be written to model acts of cognition.

As of the present time, physiology and psychology have not been revolutionized by the computer, and

(Continued on page 44)

4 Steps Forward In Gaging Strains

*Summer programs in the use of
changing devices, begun in '54,
are given now on both coasts*

TEN YEARS AGO M.I.T. began offering summer laboratory instruction in the use of strain gages. This was done because of the interest shown in a lecture program that Professor William M. Murray, '33, first organized in 1953. Every summer since then both lecture and laboratory courses in strain-gage techniques have been given at M.I.T., and nowadays, when this has been done, the instructors go to Los Angeles to repeat the programs at the University of California. Hundreds of engineers have learned the fine points about strain gages in these summer sessions, and many of this year's participants will be men sent by alumni of previous programs.

Lord Kelvin noted more than a century ago that stretching a metallic wire would change its resistance to an electrical current. The geometrical change is only partly responsible for this phenomena and the other reasons are still not wholly clear. For several decades, people failed to see how useful Lord Kelvin's discovery might be outside of scientific laboratories. Then, in the 1930's, engineers began to use wire-sensing units mounted on mechanical frames to measure stresses and strains in large concrete structures. Since then, four further developments, at roughly 10-year intervals, have greatly extended the use of strain gages in industry and facilitated many of the recent advances in both science and engineering.

Greater Ease and Sensitivity

The first step was to eliminate mechanical frames by attaching fine conductive wires directly to the surfaces of the materials to be studied. This was often difficult, and the next step was to make the wires easier to attach by pre-mounting them on thin pieces of paper or plastic. Various grid configurations, including different kinds of wires, then became available commercially.

About the time that the M.I.T. summer programs were started, a third innovation resulted from the interest in printed electronic circuits. Foils made of various alloys, and even thinner than the wires used earlier, were developed to measure strains. These foils were easier to apply on curved surfaces, and gave the engineer seeking a gage for a particular task a wider range of choices.

The fourth advance in strain-gage technology resulted, even more recently, from research in solid-state physics. Semiconductor strain gages are available now. What happens in them is better understood than what happens in the earlier wires and foils, and some of these gages are 80 times as sensitive as the older types.

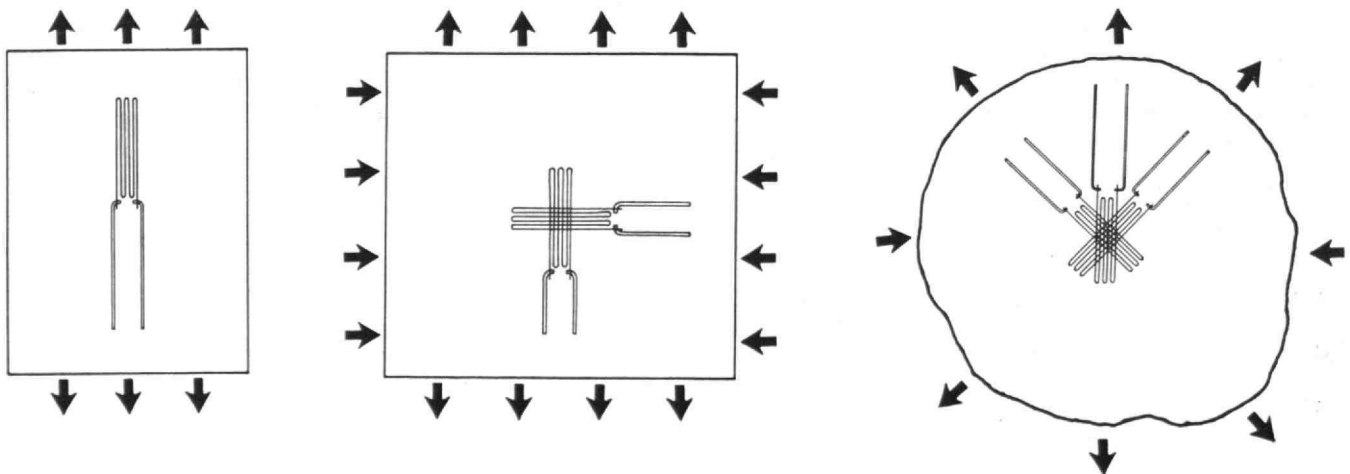
Strain gages can now be used, consequently, to measure distortions much smaller than ever before. They are now employed in work at temperatures in the range of that of liquid oxygen and as high as those of gas turbine blades in operation—and more applications of Lord Kelvin's knowledge are still being thought up.

Students' Interests Differ

Such advances, of course, explain in part the continued demand for special instruction in strain-gage techniques. For three years Professor Murray and his associates gave special strain-gage courses sponsored by the Southwest Research Institute in San Antonio, Texas, and each year since 1957 the group has presented programs at the University of California at Los Angeles.

The West Coast programs are almost identical with those offered in Cambridge. But the classes differ: At M.I.T., most of the students are interested in nearly all aspects of strain-gaging problems, whereas in California more of them are likely to be intensely interested only in special aspects. Professor Murray thinks this reflects a greater tendency in the West for such work to be done by teams of men, each member of which needs to be a specialist in only certain areas.

Associated with Professor Murray in presenting his programs this summer will be Assistant Professor Jerome Catz, '54; William T. Bean, a Detroit consulting engineer; Given A. Brewer, '38, of Brewer Engineering Laboratories in Marion, Mass.; and Greer Ellis, '38, of Ellis Associates in Pelham, N. Y. At M.I.T., a one-week lecture course will begin July 6, and be followed in the week beginning July 13 by the laboratory program. At the University of California, the two courses will be given, respectively, the weeks of August 17 and 24.



The Engineer in History

The profession's spokesmen do not adequately emphasize its real challenges and importance

BY THOMAS P. HUGHES

Associate Professor of History of Technology

AFTER reading engineering's history, I have wondered whether engineers today do justice to their profession when they are asked, "What is engineering?" Or, "What is the role of the engineer in society?" Undoubtedly the engineer can give his own job description, but this will not do for the purpose of making engineering known to the great world of nonengineering. I propose that knowledge of the history of engineering will help make the profession better understood.

The public, and successive waves of bright young men and women choosing their careers, need to better understand engineering and engineers. Public opinion has a strong influence in determining the curriculum emphasis in public education, and public opinion greatly influences public expenditure. The public should be as informed about the engineer as it is about the scientist. Quite possibly many intelligent young people who are by nature suited for the challenge of engineering now enter science.

Great and complex challenges that are substantially engineering problems face our society as they have past societies, but I doubt that the engineering nature of the problems is generally identified. I fear that the emphasis and publicity given to the scientist today prevents the engineer from playing his traditional role.

What has been the traditional role of the engineer in society? If we define the profession historically we are less likely to define engineering as what it ought to be and more likely to describe what it is. The momentum of a going concern—the conservatism of forces within institutions, classes, and professions—makes "what was" and "what is" far more similar than contemporaries sometimes realize. Furthermore, favorable characteristics of a profession that have somehow been lost in time can be re-established by those in the profession who are familiar with its history.

Since knowledge of history can help sustain and even revitalize contemporary institutions, the historian might help define engineering and the role of the engineer. Many contemporary engineers and the persons who speak for them seem unable to describe engineering at its best. For examples of this inability I will call attention to a pamphlet distributed by a major engineering professional group for young men wishing to know what engineering is and whether they are suited for it. Further I shall draw upon several books recently published as vocational guides for these young men.* In these sources the detailed descriptions of the engineer's work is generally commendable, but they do not fully evoke the traditions—the greatness—that even a casual visit,

say, to the portrait-hung rooms of Britain's Institution of Civil Engineers would give.

The definitions of engineering given in these vocational guides tend to emphasize the scientific character of engineering. It is defined as: "the professional art of applying science to the efficient conversion of natural resources"; and the finding of "useful and practical applications for that expanding treasure of scientific knowledge."

The implication is that engineers solve their problems by systematically drawing upon an ordered fund of accumulated knowledge conveniently provided by scientists. Even though one author refers to engineering as an art he adds that an art is based on a set of principles and rules. He continues with a definition of the engineering method as problem-solving requiring a clear statement of assumptions, a scientific analysis of facts, and a drawing of conclusions from these facts. It is difficult to conceive of a more straightforward—and boring—approach to the challenges of one's profession.

Turning to history, we find that outstanding engineering achievements have been compounded of little "applied science" as compared to engineering development. When working on technological frontiers, the engineer grounded in the fundamentals of science has not found a "treasure of scientific knowledge" applicable to his specific problems. It does not detract from the significance of Faraday's scientific achievement to note that the numberless engineers who developed the practical generator over half a century could assimilate the relevant science of Faraday in a few hours. Lee DeForest's own account of the invention and development of the three-element vacuum tube, which is one of the major technological achievements of our century, reveals that he built a device for which even he could not give a scientific explanation. Only later did scientists analyze the tube's function to add to "that expanding treasure of scientific knowledge."

Earlier, electrical engineers had laid out alternating-current distribution systems before there was a detailed scientific explanation for transformer characteristics,

**Engineering: A Creative Profession*. Engineers' Council for Professional Development. Third Edition, 1956.

Alan E. Nourse and James C. Webbert, *So You Want to be an Engineer*. New York: Harper & Bros., 1962.

Philip Pollack, *Careers and Opportunities in Engineering*. New York: E. P. Dutton & Co., 1959.

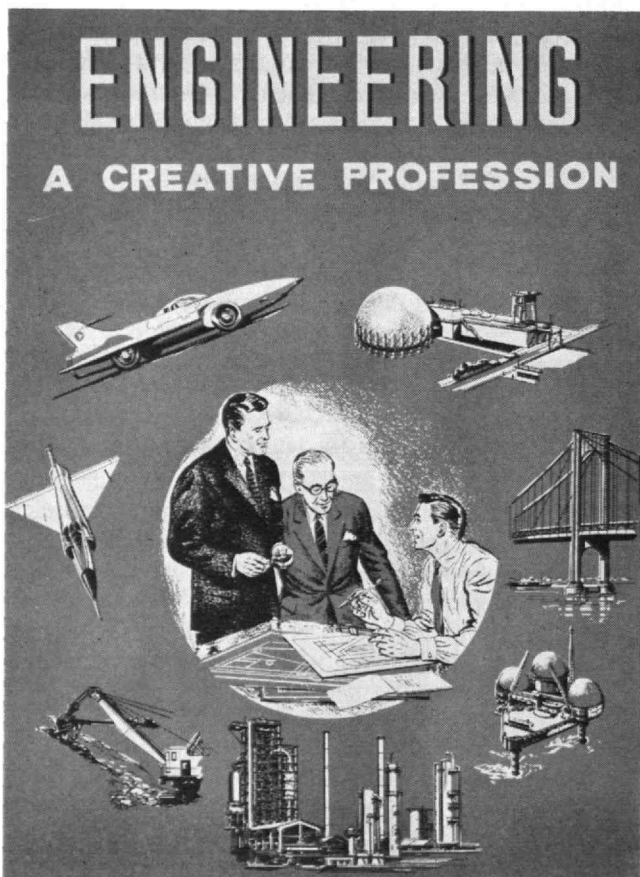
Ralph J. Smith, *Engineering as a Career*. New York: McGraw-Hill Book Co., 1956.

and before Charles Proteus Steinmetz had mathematically analyzed the AC circuit. What orderly and accumulated knowledge did the Wright brothers use and draw conclusions from except that which they themselves developed in advancing the front edge of technology? The history of the Manhattan Project shows the chemical engineers working beyond the front edge of science.†

In short, history shows science frequently bringing up the rear, systematizing information, and making teachable what the engineer working on the technological frontier already has done. A consideration of science in recent centuries reveals that Newtonian-like study of natural phenomena has been carried on, but alongside it has appeared a growing body of scientific knowledge explaining man-created events. The scientist's concern with nature has been exaggerated; he has become increasingly concerned with explaining the world of the inventor-engineer to those who merely apply science.

Popular descriptions of engineering not only distort the science-engineering relationship but also fail to identify the real creative challenge and the significant social role of the engineer. The author of the pamphlet circulated by the Engineers' Council for Professional Development, for example, stresses the satisfaction for the engineer arising from his knowledge that he affects "the everyday living of all of us"—an interpretation that ignores the major role played by engineering in critical areas of national life and international relations today.

† R. G. Hewlett and O. E. Anderson in *The New World*. Pennsylvania State University Press, 1962.



Vocational guidebooks stressing scientific knowledge have tended to overlook the profession's inspiring traditions.

Despite its title, *Engineering: A Creative Profession*, the pamphlet also fails to convey the creative satisfactions of engineering. The author discloses that engineering affects our daily lives because "behind the familiar faucet in our kitchens and baths lie extensive water-supply systems using a wide variety of equipment and services conceived, designed, constructed, and managed by professional engineers." Not only this but more is revealed in a paragraph entitled "bodily comforts." Under this rubric we learn that "because of engineers' efforts we need not worry about being warm during the coldest weather." Under electrical energy we learn that "our engineers design and produce the appliances that lighten the burdens of our homemakers," and the next paragraph on communications begins with the sentence: "Wide ranging systems of radio and television broadcasting provide the bulk of our home entertainment, education, and spot news." Engineers are involved in this making and doing, but to emphasize the kitchen-faucet terminating water supply and communicating first for entertainment is to mildly caricature our civilization, and to take a consumer's view of engineering.

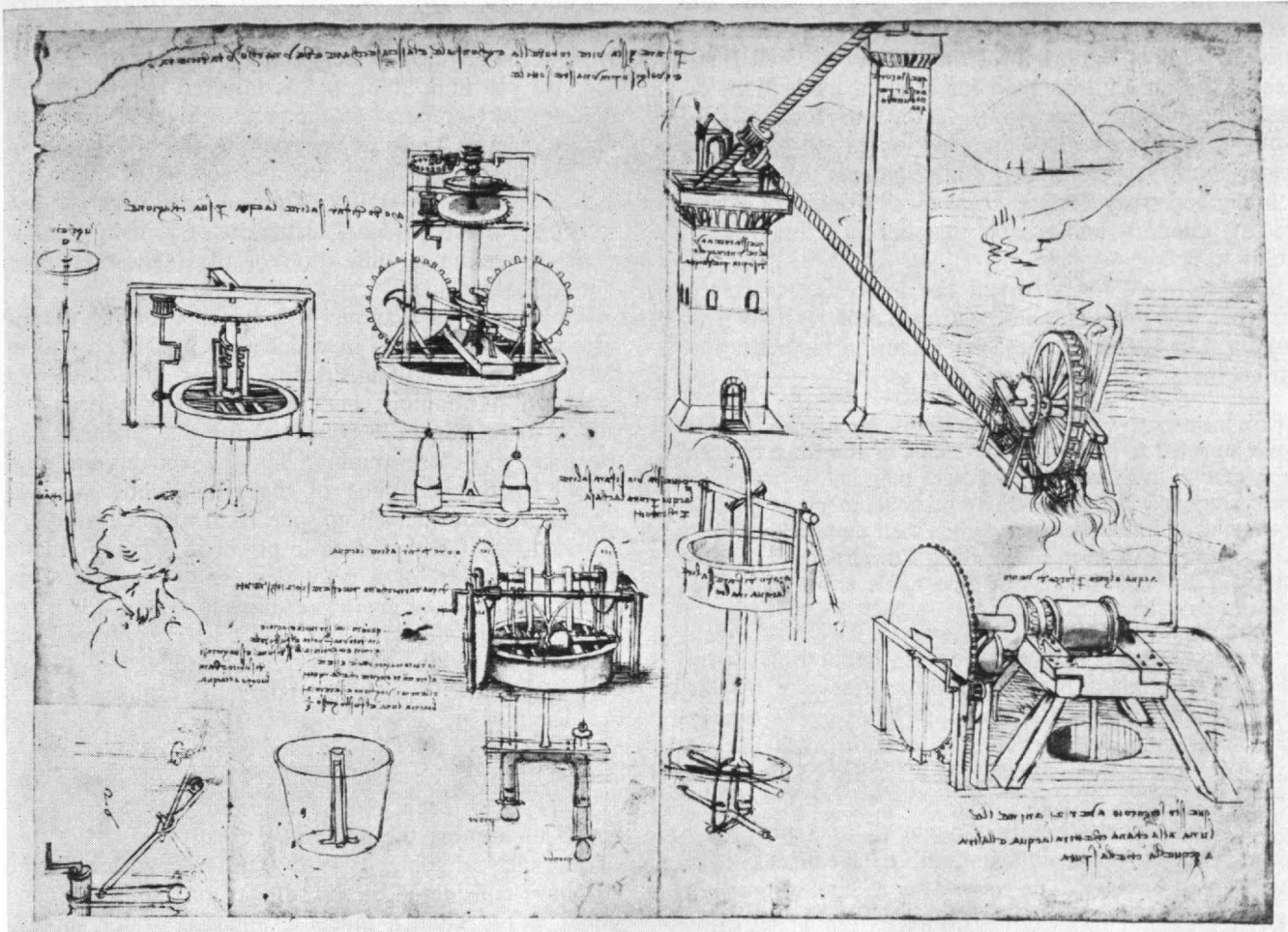
It is unlikely that many outstanding young men will enter engineering today in order to associate themselves with television, the kitchen faucet, and central heat. Not too many years ago the raising of the American living standard seemed a laudable culmination of creative engineering endeavor and, as a matter of fact, the providing of bodily comfort was front-edge engineering. Today, the raising of living standards is more a political than an engineering problem.

Since the problems thrust upon the engineer by society change, it would be better not to tie down the description of creative engineering to any particular social goal. The best way to tell a young man about the creative challenge of engineering would be to put the emphasis upon the act of creation rather than upon the end product; in short, to take the engineer's view of engineering at its best.

In the search for creativity and engineering at its best, we might consider first the engineer who recently had a painting hung in Washington. In 1483, when applying to the Duke of Milan for the post of court engineer, he described some of the engineering works he could contrive: "I can construct bridges very light and strong . . . and with them pursue, or on occasion flee from the enemy . . . I have also means of making cannon easy and convenient to carry . . . and vessels which will offer resistance to the attack . . . I can give satisfaction equal to any other in . . . designing public and private edifices, and in conducting water from one place to another."

Thus Leonardo da Vinci promised to serve the needs of his would-be employer, the Sforza Prince. Leonardo knew he had an important role as a military (and civil) engineer in Renaissance Italy where inter-princely strife was common. The 5,000 surviving pages of his engineering notebooks show his designs were good, but his handsome notebook drawings also reveal another aspect of Leonardo the engineer, and of engineering.

We find the greatness of Leonardo in circumstances other than the knowledge that he satisfied his patron's need. Leonardo's creative drive found expression in engineering. His notebooks show him studying nature in her variegated manifestations, feeling her power and



Leonardo da Vinci's notebooks show the imagination of an engineer concerned with diverse solutions to real problems.

assaying her material riches; he brought to bear his intellect and his cunning to win from this difficult mistress the power and material needed to solve the problem, to master the challenge he had assumed.

In his notebooks there is a drawing of a rampaging stream that has carried man's puny embankments before her. Leonardo's drawing reveals graphically the complex forces the river has brought to bear. Leonardo the engineer notes how he will use his knowledge of her strengths and weaknesses to channel her energies again insofar as this is possible. There is as much respect for the complexity and power of nature shown in this simple engineering drawing as is shown for the inscrutability of human nature in the *Mona Lisa*. For the genius, probing nature's infinite depths, there was no dichotomy here.

If we measure our statesmen by the Medici and the Sforza, we may measure our engineers against a Leonardo. We see him serving the needs of his patron, but we find his genius nurtured not by the end result but by the challenge of the problem. In a sense the patron, or society, was Leonardo's means of doing the creative engineering work which he enjoyed. Leonardo's satisfactions as an engineer were not the same as those of his patron as a consumer.

France, too, had great patrons and great engineers, Louis XIV wanted his magnificent palace at Versailles to overawe and subdue his nobility as well as to satisfy his craving for grandeur. For him and lesser princes, the engineers of the seventeenth century supplied great

buildings, ingenious and amusing machines, and water works for fountains. These water works were no mean engineering feats as the surviving descriptive literature on the installation at Marly supplying Versailles testifies. Marly's 75-hp plant was probably the greatest concentration of man-harnessed power in history. The display pleased Louis XIV, but the achievement was the engineer's. It was probably not the rather frivolous water works that nurtured the engineer, but the chance for his creativity to express itself.

The character of engineering may be better defined by another engineering work of Louis XIV's reign. The Canal de Languedoc achieved the impressive goal of linking in 1681 the Mediterranean with the Atlantic by a route above Spain and across southern France. Voltaire wrote of it as one of the most glorious legacies of the era. Its entrepreneur-engineer, Riquet de Bonrepos, in plain words expressed the engineer's drive: "people tell me that I am only digging a canal in which to drown myself and my family"; but "my object is not to enrich myself, but to accomplish a useful work, and prove the soundness of my design"; and "it is my passion, and I shall be in despair if I cannot finish it."

A great engineering tradition took root in Britain in the eighteenth century. The contribution of the engineers to the industrial revolution has sometimes been obscured by those who focus attention upon factory owners and factory workers. These engineers of the industrial revolution did not serve the princes or the kings, but the wealthy middle class and trade-interested Brit-

ish aristocracy. The dramatic expansion of trade and industry, to quote the words of an early nineteenth century account of the origin of the Society of Civil Engineers, "produced a demand for internal navigation. To make communications from factory to factory, and from warehouses to harbours, as well as to carry raw materials to and from such establishments, became absolutely necessary. Hence, arose those wonderful works, not of pompous and useless magnificence, but of real utility . . ."

The civil engineers served the interests of society, but this was not the prime *raison d'être* of their profession. Let Samuel Smiles, the Victorian biographer of the engineers speak for them:

These men were strong-minded, resolute, and ingenious and were impelled to their special pursuits by the force of their constructive instincts. In most cases they had to make for themselves a way; for there were none to point out the road, which, until they entered upon their undertakings, had for the most part been untravelled. To our mind, there is almost a dramatic interest in their noble efforts, their defeats, their triumphs . . .‡

An age that dramatized George Stephenson's constructive triumph in throwing railroad tracks across the mucky watery expanse of the Chat Moss in the face of general predictions of catastrophic failures challenged younger men to pick up the gantlet thrown down by nature.

Tom Edison, mistakenly thought of as a pragmatic figure without verve, imagination, or idealism, could have served as a suitable model for a Samuel Smiles's biography. Edison functioned impressively as an engineer and inventor in a free enterprise society that expended its capital upon new ways of doing and making things. Wall Street financiers, including J. P. Morgan, invested funds in Edison's inventive potential, providing him a research laboratory at Menlo Park, N.J., to amplify and institutionalize his genius. It would be an error, however, to assume that Edison found the main-spring of his achievement solely in the fortune that his financiers were ready to expend upon him or in the public fame that his useful inventions brought him. He made a revealing remark in a private letter to a wise friend: "it's not money . . . but a chance for . . . ambition to work." And Werner Siemens, Germany's most respected nineteenth century electrical inventor and engineer, wrote of him after a personal visit: "The fact that he does not work for gain only but loves his inventions with an idealistic enthusiasm, makes him especially sympathetic to us."

Edison never lacked a creative challenge since he sought the frontier of technical know-how and worked there. He appreciated science and employed capable scientists to staff his laboratories, but he preferred to work where problems could not be solved simply by applying science. He knew that the engineer accepting the challenges and implications thrust upon him at the advanced edge of technology could not draw answers to his problems from science as if it were a text or handbook. Because he worked on the front edge he had to invent, and he could use intuition and experience in an artful way.

Louis Sullivan, '74, the late nineteenth century American architect-engineer, expressed the creative drive of the engineer better than Edison and other engineers of his time. Sullivan was inspired in building his Chicago "skyscrapers" by the great bridges he had seen earlier, and in these engineering works "he began to see the powers of nature and the powers of man coalesce . . . into an IDEA of power"; he began to see "a bridge as the personal testament of a man, a testament expressing a unification of the highest energies and skills of the age."§

We have given examples of engineers serving the interests of the societies in which they flourished and at the same time fulfilling creative drives. The dual role has been harmonious and the results have been assumed to be generally beneficial for the engineer and for society. Before summarizing the conclusions suggested by this sampling of the record, however, we should also consider an episode from recent history.

When Adolf Hitler came to power in 1933 Germany was in the midst of a great depression, and for Germany's well-trained engineers this had meant a frustration of creative talents. The Nazi party understood the crucial role of the engineer and its propagandists had the psychological insight to exploit the engineer's creative aspirations and his a-political attitude. Within a few months of Hitler's becoming chancellor, Germany's leading engineering society, the *Verein Deutscher Ingenieure*, had been regimented and was used as a means to harness the engineer's creativity for the fulfillment of Nazi goals. In 1945 German engineers might well have considered the advantages of limiting the engineer to the kitchen faucet-terminating water supply.

Despite superficial differences in the character of engineering and the role of the engineer in twentieth century Germany and in Renaissance Italy, as well as in the other times and places mentioned, a core of consistency emerges. The things that engineers do and make have been determined largely by the societies in which they have functioned. Engineering may be called a profession, but the engineer hires his talents whether he be Leonardo writing to the Sforza, or Edison inventing systems which will prove profitable to his financiers. This means that the engineer more than the medical doctor, the teacher, or the clergyman finds his destiny shaped by the objectives of the society in which he lives. Hence the engineer should be especially concerned with the decisions made by those who govern society.

Another conclusion is that despite being harnessed to the needs and goals of society, the engineer has an inner drive and satisfaction which society does not affect. This is not serving the immediate needs of the society as the pamphlet suggests—it is something far more satisfying. We have seen it in Leonardo, Riquet de Bonrepos, in Samuel Smiles's engineers, and we find it today. It is taking up limited tools and limited scientific knowledge and developing these creatively to partially order, for social ends, the infinite complexity of matter and energy in the natural and man-created environment.

§Carl Condit, "Sullivan's Skyscrapers as the Expression of Nineteenth Century Technology," *Technology and Culture*, I (1959) p. 84.

‡*Lives of the Engineers*. London, 1874. I, XXII.

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Institute Yesteryears

As recalled by the late H. E. Lobdell, '17

25 Years Ago

"ULTRAHIGH-SPEED photographs revealing that glass cracks at the rate of nearly a mile a second have led to the establishment at the Institute of a \$3,000 fellowship for further photographic studies which are expected to point the way to improvements in the quality of glass through new knowledge of the behavior of the material during fracture," The Review reported. "Frederick E. Barstow, '38, as the recipient of the fellowship, will continue the research which led to his degree of master of science in the Department of Physics, [and] the program will be supervised by Professor Harold E. Edgerton, '27 . . .

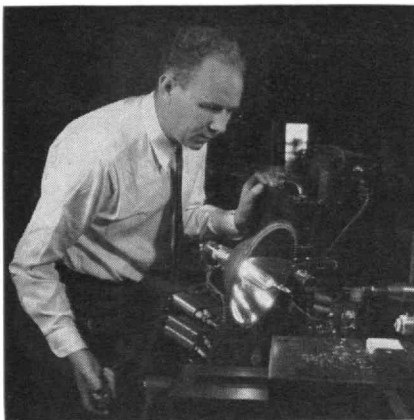
"Already Barstow's work has included the taking of pictures of shattering plates of glass with camera exposures of less than a millionth of a second. These pictures 'stop' the action of a splintering piece of glass and reveal the complicated asymmetrical pattern at various stages in the process. The results check similar experiments by German scientists, who have been breaking glass with bullets.

"To the scientist, glass presents a peculiar riddle because it is actually stronger than steel under normal conditions of compression. These studies on the brittle nature of glass are being carried out in order to discover just why and how glass breaks when a shock is applied."

► Announcement was made of the appointment of Robert G. Caldwell, U.S. Minister to Bolivia, as Dean of Humanities, to take office in September, 1939.

50 Years Ago

STONE & WEBSTER'S vouchers covering expenditures for the construction of the "New Technology" up to March 1, 1914, totaled \$320,736.86—including completion of an "aërodynamic laboratory," which was, as The Review noted, "the first structure that the Institute caused to be erected for its own uses on its site in Cambridge.



Harold E. Edgerton, '27

"This building," The Review's account continued, "is finished and the apparatus is in process of installation. This, together with the fact that Technology has already instituted courses in the study of this science, makes it the first college in the land to be fitted to prepare students for what must in the future be an exceedingly important line of development.

"The laboratory is one established by Technology out of its own funds and the Department to which it belongs is that of Naval Architecture and Marine Engineering. The new building is a modest construction on the Institute's land at Vassar Street and the portion of its equipment that is first to be installed is the four-foot wind tunnel with its accompanying blower. . . .

"One of the questions that is likely to be asked at once is why such experimentation and such a course of instruction should be placed in the Department of Naval Architecture. It is perfectly true that aircraft may be looked at from two different viewpoints, some considering them to be machines, and consequently belonging to mechanical engineering, while others realize that there is much in common with a ship that sails the sea.

"The truth is that many of the problems of the two kinds of navigation are the same, the kinds of work are substantially the same, and the form of the dirigible like that of the boat is controlled by stream

lines. Then the means of propulsion has much in common in the two kinds of constructions.

"It is true that the aëroplane has attracted much attention, but it must be realized that there is serious work for the dirigible, and in aëronautics attention must be divided between the two. Thus it is that the Department of Naval Architecture is doing the practical things in the courses in aërodynamics. . . ."

75 Years Ago

THE ANNUAL DRILL of the freshman battalion took place in the Winslow Rink, a "hall closely packed with spectators," according to *The Tech*. "The movements of the battalion were the same as in former years, were executed with snap and vigor, and were well applauded.

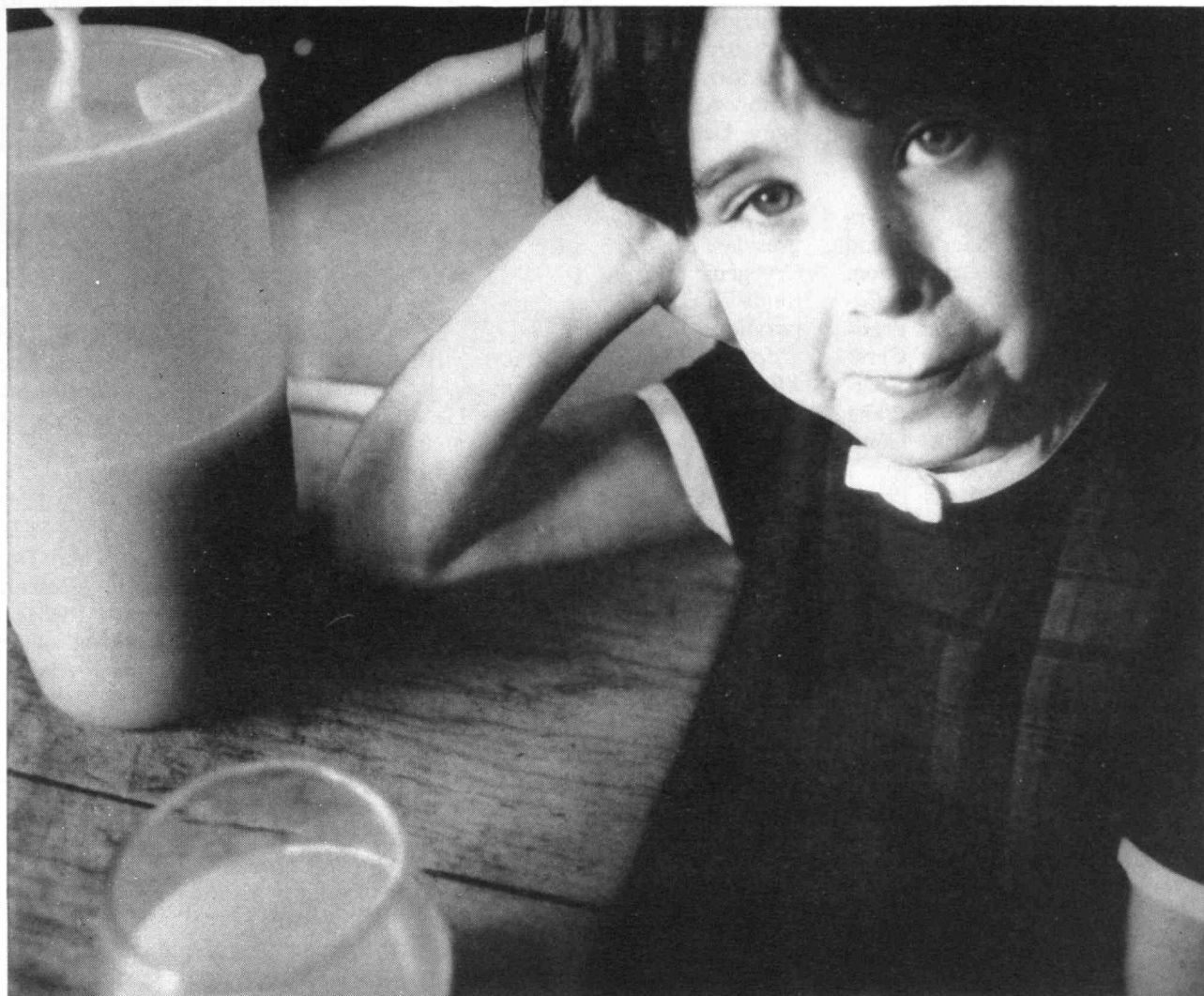
"Then, after a short rest, came the dress parade. . . . As the drum corps sounded off, the Class of '91 sent in two boys each with a goose under his arm, and carrying a banner inscribed, 'Quack, quack for '92!' who followed the drummers in their promenade up and down the hall, much to the amusement of the spectators. . . ."

► There was an epidemic of mumps at the Institute, which the Editor of *The Tech* thought should not be. "In the public schools," he wrote, "scholars who are ill with this complaint are not allowed to attend recitations until entirely well. At the Institute there is no such rule, the Faculty probably supposing the students old enough to have discretion in such matters. It is a curious fact, however, that persons having a contagious disease underestimate the danger of its contagion, and carelessly expose others."

89 Years Ago

ON MARCH 17, 1875, in the Institute Building at 491 Boylston Street, Boston, there assembled 23 graduates for the express purpose of perfecting the organization of the Alumni Association.

CORRECTION: A "75 Years Ago" item in the November issue should have said that Nicholas T. Paraschos, '92, was the first M.I.T. student from Turkey, rather than that he was the first Turkish student. Mr. Paraschos' mother tongue was Greek, his religion was Greek Orthodox, and his family home was in Constantinople, where his father was engaged in business.



Is it true that the leading producer of oxygen for steelmaking had a hand in preparing Tricia McDonald's orange juice?

You'd expect that a company with 50 years' experience in extracting oxygen from the air would lead the field. You might even assume—and you'd be right—that it knows a lot about how oxygen can speed the making of steel. As a result, the company sells oxygen by the ton to steelmakers to help them produce faster and more efficiently.

You'd also expect that a leader in cryogenics, the science of supercold, would develop an improved process for making the frozen orange juice concentrate that starts Tricia McDonald off to a bright, good morning.

But there might be some doubt that two such activities as helping to speed steel production and helping to improve frozen orange juice could come from one company. Unless you knew Union Carbide.



For Union Carbide is also one of the world's largest producers of petrochemicals. As a leader in carbon products, it is developing revolutionary graphite molds for the continuous casting of steel. It is the largest producer of polyethylene, and makes plastics for packaging, housewares, and floor coverings. Among its consumer products is "Prestone" brand anti-freeze, world's largest selling brand. And it is one of the world's most diversified private enterprises in the field of atomic energy.

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Individuals Noteworthy

(Continued from page 8)

New Posts

NAMED in the news of promotions, elections, and appointments recently were:

Elmer W. Hammond, '22, as Manager—Government Services and Special Projects, Western Region, Worthington Corporation . . . *Edward H. de Coningh*, '25, as President, Cleveland Community Chest . . . *Lester C. Smith*, '25, as a Director, West Hartford Office, The Connecticut Bank and Trust Company;

Elton E. Staples, '26, as President, Industrial Heating Equipment Association . . . *Frank C. Staples*, '27, as a Trustee, Roosevelt Savings Bank, Brooklyn . . . *Jerome Franks*, '29, as President, Husky Products Division, Burndy Corporation, Cincinnati;

Norwood D. Kenney, '30, as Vice-president, Simplex Wire & Cable Company . . . *George M. Bunker*, '31, as Chairman of the Board, The Bunker-Ramo Corporation, a new affiliate of the Martin Marietta Corporation and Thompson Ramo Wooldridge, Inc. . . . *Donald A. Holden*, '31, and *John E. Flipse*, '42, respectively, as Presi-

dent and as Assistant to the President, Newport News Shipbuilding and Dry Dock Company;

Robert B. Semple, '32, as a Director, American Natural Gas Company, Detroit . . . *Robert H. Winters*, '33, as Vice-president, Canadian Imperial Bank of Commerce . . . *John G. Benson*, '35, as Vice-president and General Manager, Cryogenic Products Department, Linde Division, Union Carbide Corporation;

John E. Eberhardt, '36, *Donald J. Blickwede*, '48, and *Theodore B. Winkler*, '48, respectively, as General Manager, Director of Research, and Assistant General Manager—Homer Research Laboratories; and *John D. Briggs*, '42, as Manager—Market Research and Planning, Bethlehem Steel Company;

Walter K. MacAdam, '36, and *Thomas F. Jones, Jr.*, '40, as Directors-at-Large, Institute of Electrical and Electronics Engineers . . . *Alfred A. Roetzer*, '37, as General Manager, Wagner Bag Division, St. Regis Paper Company;

George R. Weppeler, '37, as President, Harvey Hubbell, Inc. . . . *W. Robert Hydeman*, '39, as Director of Management Information Services, George Fry & Associates . . . *Henry C. Bourne, Jr.*, '44, as Professor of Electrical Engineering

and Departmental Chairman, Rice University;

Hugo C. Johnson, Jr., '46, as Director, Product Development Division, U. S. Steel . . . *Robert H. Marks*, '46, as Managing Editor, "Power," for McGraw-Hill;

Edward M. Bennett, '47, *James H. Burrows, Jr.*, '49, *John F. Jacobs*, '52, and *William J. P. Byrne*, '58, respectively, as Head, System Sciences Department; as Associate Technical Director; as Acting Technical Director; and as Head, Computer Applications Department—Information Systems Directorate, MITRE Corporation;

Thomas P. Cheatham, Jr., '47, as a Corporate Vice-president, Litton Industries . . . *John C. Fisher*, '47, as Manager, Liaison and Transition, General Electric Research Laboratory . . . *Donald R. Merriam*, '49, as Vice-president—Operations, The Buckeye Pipe Line Company;

Lieutenant Colonel Milton S. Hochmuth, '50, as Commanding Officer, Harry Diamond Laboratories, U. S. Army . . . *J. Lowen Shearer*, '50, as Rockwell Manufacturing Company Professor of Engineering, The Pennsylvania State University . . . *Markwick K. Smith, Jr.*, '51, as Executive Vice-president, Geophysical Service Inc.;

Richard A. Hickland, '52, as Vice-president—Operations, Oxford Paper Company . . . *Carl I. Swanson*, '53, as Manager, Microcircuit Customer Services, The International Resistance Company . . . *Charles W. Simmonds*, '54, as Associate Professor, Denver Extension Center, University of Colorado;

Reuben O. Schlegelmilch, '55, as Manager, Advanced Missiles Programs, Federal Systems Division, Space Guidance Center, International Business Machines Corporation, Owego, N.Y. . . . *Richard W. Slocum, Jr.*, '35, as Head, Advanced Concepts and Techniques Section, Spacecraft Sciences Subdivision, Aerospace Corporation . . . *Harry B. Duane, 3d*, '57, as Assistant Controller, Abrasive Division, Norton Company;

Martin J. Fitzgerald, Jr., '58, as National Sales Manager, Navigation Computer Corporation . . . *Thomas G. Johnston*, '63, as Division Superintendent—Hot Processing, National Tube Division, U. S. Steel.

(Concluded on page 38)

At the Alumni Council's 369th Meeting . . .

VICE-PRESIDENT Samuel A. Groves, '34, of the Alumni Association presided at the Alumni Council's 369th meeting, held January 20 at the Faculty Club, and the members and guests heard:

► Professor Carl F. J. Overhage review the results of Project West Ford, and O. Robert Simha, '57, report on new M.I.T. buildings.

► Horace S. Ford, eldest Honorary Member of the Association, describe a visit with Walter Humphreys, '97, eldest member of the Council.

► F. Leroy Foster, '25, present resolutions in memory of Emmons J. Whitcomb, '11, and Percy R. Ziegler, '00, present resolutions in memory of Wallace M. Ross.

► Gregory Smith, '30, emphasize the need for increasing gifts to the Alumni Fund.

► Frederick G. Lehmann, '51, Secretary, report that Mr. Groves will be chairman of the Fifth Alumni

Officers' Conference next fall, and Robert W. Reynolds, '30, will be chairman of the 1964 Alumni Day Publicity Committee.

Alumni Day subcommittees include: *Banquet and Entertainment*, John H. Macleod, Jr., '41, Miles Cowen, William Morrison, Allan Q. Mowatt, '35, Mark R. Pratt, '60, and Mrs. Leona N. Zarsky, '41; *Luncheon*, Everett R. Ackerson, '41, Arthur L. Bryant, Jr., '44, William H. Carlisle, Jr., '28, Harold D. Gurney, '31, Leo A. Kiley, '29, Richard L. McDowell, '60, Irving Stein, '41; *Symposium*, Donald A. Hurter, '46, Johan M. Andersen, '41, Benjamin J. Brettler, '48, Mrs. Robert C. Caselman; Russell N. Cox, '49, John T. Fitch, '52, Harriet L. Hardy, Allen Latham, Jr., '30, Clarence S. Lyon, '46, Mrs. Philip H. Peters; *Registration*, Wolcott A. Hokanson, D. Hugh Darden, James H. Eacker, '55, and G. Edward Nealand, '32.



New England Life agent Ken Mellen (Utica College) calls at the home of Mr. and Mrs. Ray Cook in Utica, New York.

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Cleaner Distributorship in Utica, signed up for personal life insurance with Ken. He liked the way things were handled and called Ken in to work out a group insurance plan for his salesmen. These men, in turn, were so impressed that each of them went to Ken for personal life insurance. Begin to see how Ken reached the million mark?

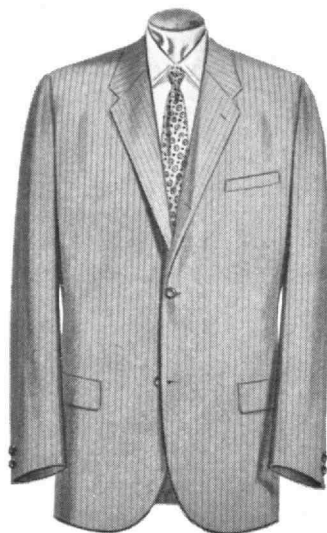
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Individuals Noteworthy

(Concluded from page 36)

M.I.T. Data Specialists

A NEW Office of Institutional Stud-
ies is being established at M.I.T.
and will be directed by Robert E.
Hewes, '43, who will be succeeded
as Registrar by Warren D. Wells, '48.

Mr. Hewes will plan and direct
studies of the budget, use of equip-



Mr. Hewes



Mr. Wells

ment, space, and secretarial sup-
port, in co-operation with adminis-
trative offices and Faculty commit-
tees. Advanced data-processing
techniques will be used in many
such studies.

Mr. Hewes joined the Registrar's
Office in 1948 after five years in in-
dustry and became associate regis-
trar in 1953 and registrar in 1956.
He is a past president of the New
England Association of Collegiate
Registrars and Admissions Officers,
former chairman of the Council on
Educational Data Systems, a member
and former director of the Associa-
tion of Educational Data Systems,
and a member of the U.S. Depart-
ment of Health, Education and Wel-
fare Office of Education Advisory
Panel on Educational Statistics.

Mr. Wells became assistant regis-
trar in 1951 and associate registrar
in 1957. He has been executive of-
ficer of the Institute's Committee on
Curricula since 1957 and has taught
chemistry since 1951. He is a mem-
ber of both the New England and
American Association of Collegiate
Registrars and Admissions Officers.

To Help Others

JOHN W. SHEETZ, 3D, '42, Director
of Development at M.I.T., will be
chairman of a conference on data
processing to be staged in New York
on April 6 and 9 by the American
Alumni Council for alumni adminis-
trators and educational fund rais-
ers.



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Biomedical Communication Problem

(Concluded from page 15)

Next, the NRP disseminates its information rapidly by means of periodic meetings and through publications edited by a professional science-writing staff. This staff is responsible for conveying the informative, evaluative, and integrative information to Associates in monthly communiqués. After further intramural processing, the information is made available to the scientific public in several forms.

Finally, the NRP—again like a brain—is trying not only to adjust to its scientific environment but also to improve it, by making integrated neuroscience a permanent feature of research and education.

After concentrated Work Sessions have been held on most of the subjects identified as significant to the central neuroscience problem of the mind, a month-long Neurosciences Intensive Study Program is planned at which the individual subjects will be characterized by participants in Work Sessions already held and by others. By this means, the true components and natural limits of neuroscience will be delineated, just as a previous, precedent-setting, comparable meeting at Boulder, Colo., established the field of biophysics.

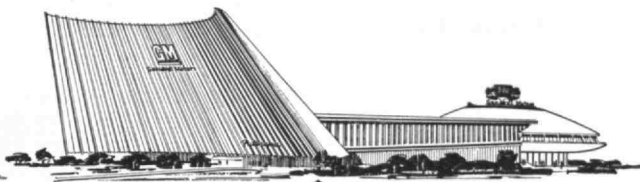
An important dividend of the Study Program will be the close personal interaction between specialists and students in many of the neurosciences made possible by living together and working together over a four-week period. Again as in the case of the Boulder meeting, the proceedings of the Neurosciences Intensive Study Program will be published in a definitive volume which will be made available for broad distribution.

This Boston Center has been established by the NRP Associates with the co-operation of the American Academy of Arts and Sciences and the Brandegee Charitable Foundation, under the sponsorship of M.I.T., with funds from the National Institutes of Health, the National Aeronautics and Space Administration, and the Rogosin Foundation.

The programs and activities of groups of investigators banded together by mutual interest in a fast-moving field of high significance for science and possibly for society will almost certainly be highly original, departing widely from the normal procedures of societies and symposia of the more conventional type. Though such activities qualify highly for support from government agencies and though these agencies have been generous in their support, the private foundation of limited though substantial means, long dwarfed by the giant Federal granting agencies, may find in the invisible college, devoted to a field of particular interest to the foundation, an ideal means of maximizing its effectiveness.

In the revolution of science and technology now upon us, this argument suggests not only large increases in numbers and types of personnel, and not just the inevitable super-computerized automation, but also full activation and support for the invisible colleges of highly creative scientists that are arising in response to great scientific and human challenges. Invisible colleges, composed of extremely active and competent investigators in fast-moving fields, offer the best short-term promise for solution of the communications problem and one worthy of generous support.

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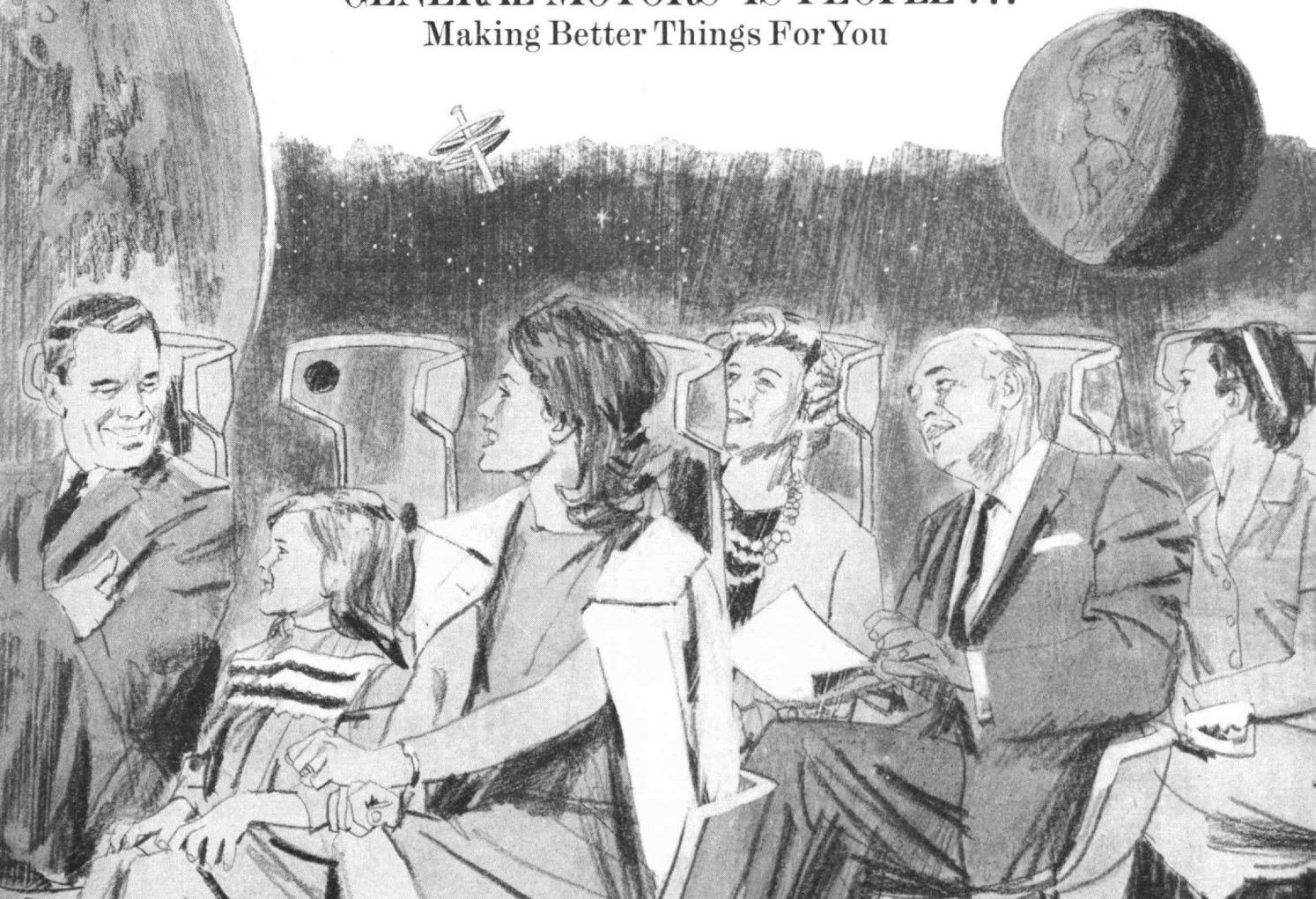
The building is 680 feet in length (a very long par three on any golf course). It's 200 feet wide (forty more than a football field), and from the stark beauty of the ten-story-high canopy entrance to the wide scope of the domed pavilion at the rear, it expresses one thing very clearly: *tomorrow!*

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An Embryonic Computing Utility

(Concluded from page 16)

Related work supported by the Department of Defense is being done at the headquarters of the System Development Corporation in Santa Monica, Calif., Stanford University, the Stanford Research Institute, the University of California, and the Carnegie Institute of Technology. A large computer in Santa Monica already has been operated from a terminal at M.I.T. at the same time that it was serving persons at six other Teletype stations in California.

The Communication Process

To use the 7094 in Technology Square now from a Teletype in one of the main M.I.T. buildings, a person first must log into the system and identify himself. The machine usually can accept his call quickly, and respond to his requests rapidly, even though it may already be serving other patrons at other Teletypes. Once it has accepted the call, each user can proceed almost as though no one else had access to the machine.

When asked, the machine will print out data given to it previously, so that a user may change or correct his material and instructions. He can log in and log out as frequently as he wishes with complete confidence that his inputs will not be lost, and each time he logs out he receives a report on how much actual computing time he has required.

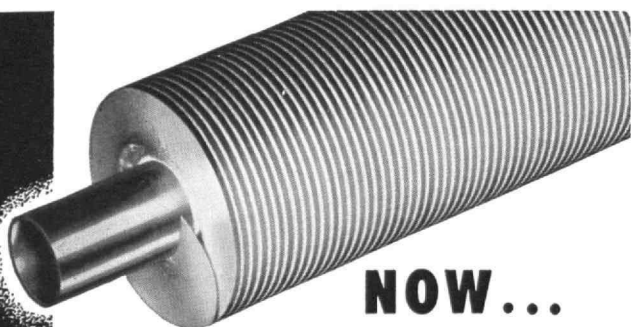
When not responding to calls from remote users, the 7094 busies itself with programs given to it in batches beforehand (the old-fashioned way).

Every user of the machine must address it, however, in a way that it can understand. Encouraging progress has been made recently in efforts to enable the 7094 to heed instructions given to it in simple English, but in most instances a dialogue between a man and the machine still must be conducted in a special language.

One of the most frequently used of these languages is FORTRAN (derived from FORMula TRANslator) and there are several varieties of FORTRAN. Another one of the machine languages is called MAD (an acronym for Michigan Algorithm Decoder). Civil engineers, persons studying language translation, and others with special interests have developed a long list of special languages helpful in their work, and several of these can be used with the 7094. M.I.T. was chosen as the site of the MAC project partly because of the varied interests of its Faculty, the number of people already adept in the use of such languages, and the enthusiasm at the Institute for making communication with a machine easier than it now is for most people.

In addition to the 7094, the MAC staff has a Digital Equipment Corporation PDP-1 and special equipment for studying graphical communication between men and machines.

MAC is committed to no single kind of either software or hardware. Nor is it primarily concerned with simply serving men who already know exactly what they want from computers and how to get it. The system now operating has proven remarkably reliable, and highly helpful to many users, but Professor Fano considers it still too embryonic to boast about.



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New Books

(Continued from page 27)

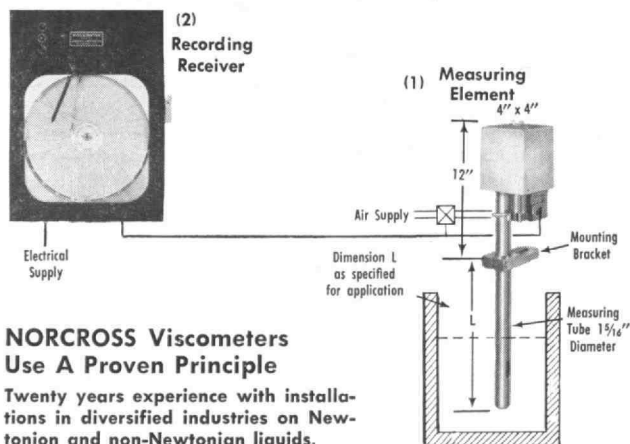
they may never be. Yet it is worth noting that Harvard chose as its William James Guest Lecturer in Psychology last year, Herbert Simon, a leading researcher in the computer simulation of human cognitive processes. Just for the record, the large attendances at Simon's lectures were enthusiastic and sustained.

Philosophers, as a group, may be noticing the computer even less than psychologists at the moment, but Sayre and Crosson have taken a step toward bridging the communication gap. With this collection of 14 essays, they attempt to encourage greater interaction between their philosopher-colleagues and simulators of mental processes. The editors contend that, 1) the primary ingredient in a good simulation of human behavior is an understanding of the functions underlying the behavior; 2) philosophers have been in search of such understanding for several centuries now; 3) some of their insight may be useful to simulators.

This hope guided the selection of the majority of essays, namely: "Remarks on Mechanical Mathematics," by Ludwig Wittgenstein; "Sensation and Observation," by Gilbert Ryle; "Human and Mechanical Recognition," by Kenneth Sayre; "Stimulus Analysing Mechanisms," by Norman Sutherland; "On the Conceptual Consciousness," by Aron Gurwitsch; "Experience and the Perception of Pattern," by Michael Polyani; "The Mechanical Concept of Mind," by Michael

(Concluded on page 46)

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New Books

(Concluded from page 44)

Scriven; and "Minds, Machines, and Gödel," by John Lucas.

Also included in the collection are three papers by well-known computer researchers: "Experimental Music," by Lejaren Hiller and Leonard Isaacson; "The Chess Machine," by Allen Newell; and "Toward Mechanical Mathematics," by Hao Wang.

Finally, there is an article by Donald MacKay on "Mindlike Behaviour in Artefacts"; and two introductory essays: one by Anatol Rapoport on "Technological Models of the Nervous System," and one by the editors on "Modeling: Simulation and Replication." All of the essays except this last (which is actually the first) have appeared in print previously, with dates of original publication ranging from 1949 to the present.

By placing the Lucas essay last, the editors have given the volume a reassuring final note. Lucas concludes his essay, and thus the book, with a view he infers from a theorem by Gödel:

"We can produce models and explanations, and they will be illuminating: but, however far they go, there will always remain more to be said . . . no scientific enquiry can ever exhaust the infinite variety of the human mind."

All good philosophers can rest peacefully tonight.

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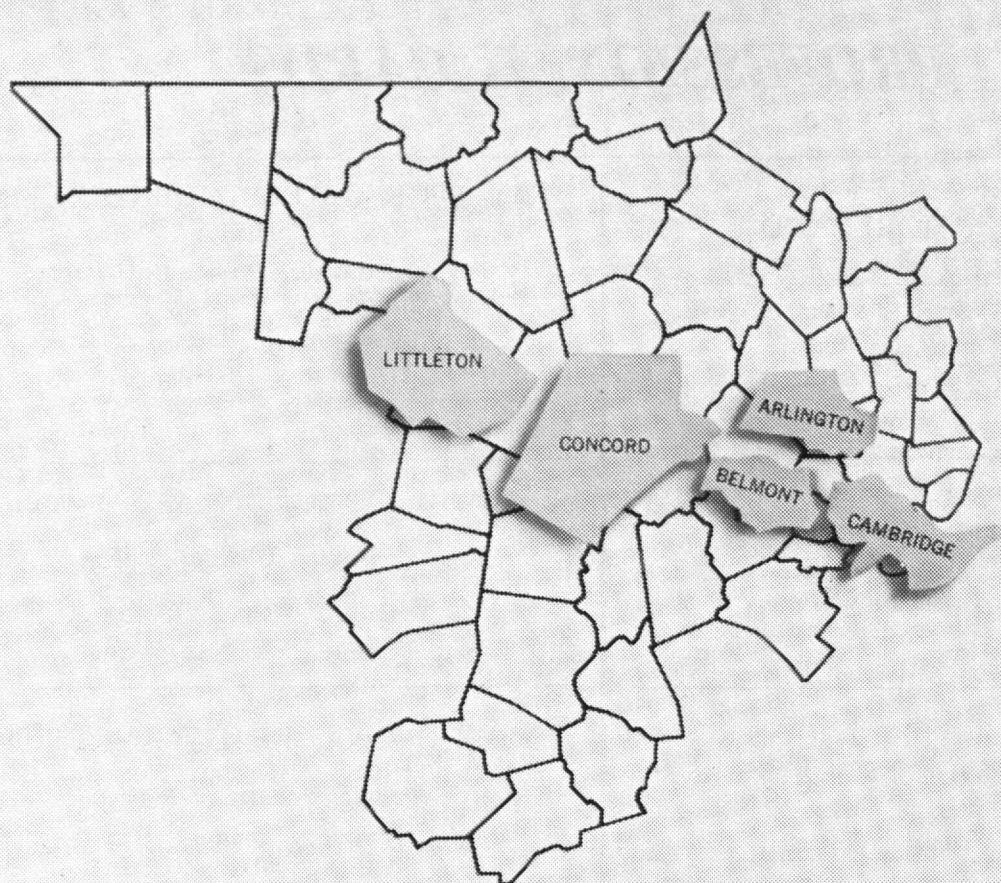
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Club News

Western Pennsylvanians Attend Cleveland Conference

Members of the M.I.T. Club of Western Pennsylvania plan to participate in the 1963-1964 Cleveland Conference sponsored by the Institute and the M.I.T. Club of Cleveland. This conference provides information to guide educational counselors and Alumni on the latest opportunities and programs available at M.I.T.

The March 2 meeting of the Club was to have education as its theme, and be attended by guidance counselors from the Pittsburgh area high schools. In addition to a talk by Roland B. Greeley, M.I.T. Director of Admissions, a presentation was to be made by the Pittsburgh Committee for a High School of Science. This committee is working on the establishment of a central school offering an enriched curriculum to residents of the greater Pittsburgh area. Students are to be admitted on the basis of their scholastic ability and the results of a competitive entrance examination. The school will benefit students with particular interest in the fields of science, mathematics, and the humanities and will provide enriched opportunity for the early development of their talents. It will be a part of the public school system of the Commonwealth of Pennsylvania and will be a joint venture of those school districts in the Pittsburgh area which wish to participate. The program of instruction will be patterned after that of the highly successful Bronx High School of Science.

The next meeting will be a dinner and tour of Gulf Research Laboratories on Monday, May 4, 1964.—Eli I. Goodman, '50, Westinghouse Astronuclear Laboratory, P.O. Box 10864, Pittsburgh 36, Pa.

Atlanta Alumni Greet Students

The M.I.T. Club of Atlanta held a luncheon on December 27 at the "Top of the Mart" for students who were home for Christmas vacation. Twelve students attended together with three fathers of students and seven club members—one of whom, Fred N. Dickerman, '30, was also a father. The students related their interests and observations on the academic and social life at M.I.T.

The following students and members attended: Harold Barnes, '66, Bill Carithers, '64, Ken Dickerman, '65, Philip Hardin, '65, and father, Leland Jackson, '62, Bob Large, '66, Andy Lemer, '67, Richard Lipes, '64, Tom MacMillan, '66, and father, Bill Moss, '66, John Sheats, G. Jim Veazey, '66, and father, Fred Dickerman, '30, R. L. Flege, '32, M. C. Mander-son, '53, B. H. Meyer, '42, C. P. Moore, '48, E. E. Sanborn, '22, H. M. Walton, '49.—Bernard H. Meyer, '42, Secretary, 5845 Brookgreen Road, N.E., Atlanta 28, Ga.

Future M.I.T. Club Meetings

Following are the dates and principal speakers as announced at the time of printing for M.I.T. Club meetings during March and April, 1964. For more details consult the club secretary in your city.

March 2—M.I.T. Alumni Center of New York—Civil Engineering

Executive Secretary: James N. Phinney, United Engineering Center, 345 East 47th Street, New York

March 2—Pittsburgh—Annual Guidance Counselors Meeting

Secretary: Eli I. Goodman, '50, Westinghouse Electric Corporation, Astronuclear Laboratory, P.O. Box 10864, Pittsburgh

March 5—Detroit—Professor Antoine M. Gaudin

Secretary: J. Edward Schwartz, '52, 1912 Yosemite, Birmingham

March 7—Cleveland—Regional and Guidance Conference

Reservations: Bruce A. Lamberton, 1705 Superior Bldg., Cleveland

March 12—Washington, D.C.—Program to be Announced

Secretary: Richard R. Martin, '45, Decision Systems, Inc., Kennington, Md.

March 12-14—Mexico City—16th Annual Fiesta

Reservations: Alvino Manzanilla-Arce, '31, Angel Urzaa 1311, Mexico, D.F.

March 12—Boston—Professor Glenn C. Williams, '42

Secretary: John M. Reed, '51, Room 831, 73 Tremont Street, Boston

March 18—Toronto—Professor Jay W. Forrester, '45

Secretary: Michael M. Koerner, '49, Suite 1001, 55 Yonge Street, Toronto

March 20—Worcester—Professor Stanley Backer, '41

Secretary: Arnold A. Kramer, '52, Mechanics Upholstering Co., Worcester

April 8—Worcester—Professor Huston C. Smith

April 9—Boston—Program to be Announced

April 29—Washington, D.C.—Program to be Announced

Additions to this column of meeting announcements are welcome. Copy is due March 20 for the May issue of The Technology Review and should list your club meetings for May and June. Send your copy to: Alumni Secretary, M.I.T. Alumni Association, Room 1-280, Cambridge 39, Mass.

Rochester M.I.T. Club Hears Professor Ashdown

The M.I.T. Club of Rochester held its annual Christmas luncheon on December 23 with 58 members and guests attending. Short discussions of student life were given by five of the 10 Rochester area Tech students who attended—Tom Maier, '67, Chuck Breckheimer, '66, Charles Senjowski, '65, Bill Young, '64, and Richard Cartwright, G.

Professor Emeritus Avery A. Ashdown spoke, giving us some insight into the educational philosophy being considered and initiated at M.I.T. Professor Ashdown was the Christmas guest of Cyril J. Staud, '24, retiring Director of Research for Eastman Kodak.

Howard J. Samuels, '41, and son Bill, '65, bantered a bit about their relative experiences in politics, with Bill relating his involvement in student government. The discussion was arranged by Harry E. Essley, '36, local chairman of the Educational Council.

The nine high school students who joined us for lunch at the invitation of the Educational Council mentioned their appreciation for this opportunity to mix with

Tech students, past and present. Despite Christmas shoppers, snail-like traffic, and full parking lots, the obstacles were overcome in typical M.I.T. fashion—risking parking citations!—Gail E. Millard, '58, Secretary, 104 Cliffordale Park, Rochester, N.Y.

Florida Club Hears Of M.I.T. Admissions

The M.I.T. Club of Orlando held a dinner meeting on December 2 in conjunction with a Central Florida Guidance Counselors' conference. M. Bryce Leggett, '40, of the M.I.T. Admissions Office, discussed the adjustments high school seniors must make as college freshmen, and explained downgrading, self-discipline, pacing, deadlines, and selectivity of the student. Hugh W. Schwarz, '42, Educational Counselor for our club, was chairman.

New officers elected for 1964 are: George C. Pfaff, Jr., '39, of Winter Park, President; Herbert C. Sanderson, Jr., '43, of Orlando, Vice-president; and Lorin M. Hailey, Jr., '50, of Orlando, Secretary-Treasurer.—George C. Pfaff, Jr., '39, President, 1910 Summerland Avenue, Winter Park, Fla.

Texas Clubs Consider Medical Engineering

On December 18, 1963, the M.I.T. Club of Northern Texas staged its annual Christmas Cease-Fire Meeting, uniting M.I.T.'s sons from Dallas and Fort Worth once again in peaceful co-existence. Scene of the summit conference was Howard Johnson's restaurant on the Dallas-Fort Worth Turnpike, chosen because it is precisely mid-way between the respective camps and faces in a neutral direction. All sharp-pointed objects were deposited at the door, and a wonderful time was enjoyed by all.

We were privileged to have as our speaker Dr. Jere Mitchell, of the University of Texas Southwestern Medical School in Dallas. Dr. Mitchell, a researcher in heart physiology for the American Heart Association, and winner of the Association's Young Investigator Award in 1962, told of the tremendous contributions which engineering is making in the field of medical research, both in methods and in hardware. Included were movies and slides showing how engineering techniques are used in analyzing performance of the heart. The question and answer session following Dr. Mitchell's talk met such enthusiastic reception, from members and wives alike, that the meeting had to be forcibly adjourned due to closing of the restaurant.

An active year in '64 is planned, with more such worthwhile and enjoyable programs on the agenda.—Phillip S. Schmidt, '62, Secretary-Treasurer, P.O. Box 482, Fort Worth, Texas.

Ontario Alumni to Meet With Harvard Business Club

Taking advantage of the Christmas holidays, the M.I.T. Club of Lower Ontario had a meeting at which four Tech students gave their impressions of the Institute and answered questions. The two undergraduates participating were Martin Golder, '67, and Bruce Fauman, '64; the graduate students were David Falconer, electrical engineering, and Ted Jarman, School of Industrial Management. The club's president, Edward M. Peacock, '47, was chairman of the meeting at the Toronto Engineer's Club and Robert H. Winters, '33, President of the Alumni Association, was among the guests.

The next club meeting will be on March 18 with the Harvard Business School Club of Toronto. Jay W. Forrester, '45, Professor of Industrial Management, will speak.—Michael M. Koerner, '49, Ridgely Road, Toronto, Ontario, Canada.

Delaware Valley Club Hears Dean Johnson

The M.I.T. Club of the Delaware Valley held a joint luncheon meeting with ASME at the Engineer's Club in Philadelphia on December 19. Dean Howard W. Johnson, of the M.I.T. School of Industrial Management, spoke.—John B. Murdock, '41, Secretary, 15 Runnemed Avenue, Lansdowne, Pa.

Washington Alumni Club Holds Annual Luncheon

Sixty applicants for admission to M.I.T., 35 Washington area Tech students home for Christmas vacation, and 24 Alumni were present for the eighth annual Christmas vacation luncheon of the M.I.T. Club of Washington on December 27 at the Cosmos Club. This luncheon, under the chairmanship of Robert W. Blake, '41, supports the Washington area M.I.T. Educational Council. Following introductory remarks by Bob Blake and Paul M. Robinson, Jr., '44, Club President, those present heard James Evans, '63, now a graduate student, speak on "Student Life at M.I.T.," and William C. Howlett, '49, Chairman of the Washington area Educational Council and president of Union Iron Works, speak on "The Importance of a Broad Based Education."

Organization of the Alumni Fund Drive in Washington, D.C., continues under the chairmanship of Sterling H. Ivison '41, Captain, U.S. Navy. Recruiting of regional chairman, vice-chairman, and solicitors is continuing.

This area, with about 900 Alumni who have contributed at least once before, is divided into seven regions under the following chairmen: D.C., David B. Cobey, '61; Bethesda. Chevy Chase, Cabin John, Garrett Park, and Glen Echo, Md., Sterling H. Ivison, Jr. '41; Silver Spring, Deerwood, Kensington, and White Oak, Md., vacant; North Prince George's County, vacant; Alexandria and Springfield, Va., William P. Jensen, '50; Arlington, Va., vacant; Falls Church, Fairfax, Annandale, Oakton and Burke, Va., A. Homer Skinner, Jr., '42.

The January 28 dinner meeting was to feature a talk by C. Darwin Stolzenbach, '35, Administrator of the National Capitol Transportation Agency, on "Problems and Progress in Urban Transportation." This is currently a highly controversial problem in greater Washington, D. C.

Other meetings scheduled include March 12 and April 29 dinner meetings at the Cosmos Club. The Club welcomes new members. If you are new to the D. C. area, please get in touch with us.—Richard R. Martin, '45, Secretary, Decision Systems, Inc., Kensington, Md.

Stein Club Topic Is Foreign Policy

The Boston Stein Club was to hold its mid-winter dinner meeting on January 29 at the M.I.T. Faculty Club. Eugene B. Skolnikoff, '49, a lecturer in economics at M.I.T., will discuss "Science and Foreign Policy." He will explain the interaction of science and foreign policy in Washington, and the technical inputs of foreign aid, information policy, security affairs, and international scientific co-operation. His topic will include the role of scientists and engineers in the policy process and some current policy concerns. Mr. Skolnikoff has been associated with the Institute for Defense Analysis at the Pentagon and, for the last five years, was on the staff of the President's Special Assistant for Science and Technology.—Mel A. Barkan, '55, 10 Emerson Place, Boston, Mass.

Kansas City Alumni Meet M.I.T. Students

The Alumni in the Kansas City area had their annual holiday luncheon on December 28 with the local students, accompanied by their fathers. We met at the Fred Harvey Restaurant for a luncheon and anecdotes from several of the students present. Guests included eight students and six fathers. Christopher B. Hakan, '67, gave his views of M.I.T. as seen by a freshman.

Everett P. Weatherly, Jr., '29, reported to the group on the December 5 meeting of Associate Professor William H. Dennen, '42, Ev Weatherly and others of the regional Educational Council with college placement counselors from the Kansas City area high schools. Subsequently, we had a joint meeting of these people and M.I.T. club members.

Club officers elected for the next two years are Bernard J. Duffy, '44, President; B. J. Kirkwood, '49, Vice-president; Peter Bulkeley, '55, Secretary; and Philip E. Gruber, '25, Treasurer. Retiring as president for the last three years was J. Warren Evans, '39. Plans for the spring and summer are now underway.—Beverley J. Kirkwood, '49, Secretary, 4308 West 79th Street, Prairie Village, Kansas.

New Haven Group Holds Student-Alumni Luncheon

The New Haven County M.I.T. Club held a M.I.T. Student-Alumni Luncheon on December 28 at the Waverly Inn, Cheshire, Conn. This marked the first year the club has arranged such a meeting and all M.I.T. students in our geographical area were invited. The fathers of the students were also invited and most students attending did bring along their dads. More than 30 alumni, students, and fathers were in attendance.

Following the luncheon, four students were asked to talk on some phase of student life at M.I.T. Such diverse topics were chosen for discussion as: the relatively new Freshman Seminar program; the humanities curriculum, fraternities, and the role of a woman at M.I.T.—the latter being presented by the one coed residing in our area. The talks led to an informal group discussion. Judging from the enthusiasm expressed, we hope to see this program continued as an annual holiday season activity in future years.—Jay R. Bonnar, '57, Secretary, Lower Grassy Hill Road, Woodbury, Conn.

Boston Club Topic Is Nervous System

The M.I.T. Club of Boston met at the Union Oyster House on January 9 to hear Patrick D. Wall, Professor of Physiology, describe "The Brain Probes the World." He explained new techniques and ideas—which may influence fields from philosophy to engineering—in the understanding of the sensory nervous system.—John M. Reed, '51, Secretary, Room 831, 73 Tremont Street, Boston, Mass.

Class Reunions Scheduled for This Spring

1899: Reunion Chairman, William A. Kinsman, 348 High Street, Newburyport, Mass.; M.I.T. Campus, June 12-15.

1904: Reunion Chairman, Carle R. Hayward, 120 Beacon Street, Boston; Stanley McCormick Hall, M.I.T. Campus, June 12-15.

1909: Reunion Chairman, John F. Davis, 33 Arlington Street, Cambridge 40, Mass.; New Ocean House, Swampscott, Mass., June 14.

1914: Reunion Chairman, Ray P. Dinsmore, 1 Overwood Road, Akron, Ohio; Charter House Motor Hotel, Cambridge, Mass., June 12-14.

1915: Class Cocktail Party. Chairmen: Albert E. Sampson, 9 Thorndike Street, Beverly, Mass.; Barbara Thomas; M.I.T. Faculty Club, June 15, 4:00 P.M.

1916: Reunion Chairman, Ralph A. Fletcher, P.O. Box 71, West Chelmsford, Mass.; Chatham Bars Inn, Chatham, Mass., June 12-14.

1919: Reunion Chairman, Wilfred O. Langille, Diehl Manufacturing Company, Finderne, Somerville, N.J.; Chatham Bars Inn, Chatham, Mass., June 12-14.

1924: Reunion Chairman, Charles O. Duevel, Jr., 33 Coit Lane, Norwich Town, Conn.; Oyster Harbors Club, Osterville, Mass., June 12-14.

1929: Reunion Chairman, Eric Bianchi, 390 Grove Street, Needham, Mass.; Wianno Club, Osterville, Mass., June 12-14.

1934: Reunion Chairman, Norman B. Krim, 15 Fox Lane, Newton Center 59, Mass.; Wychmere Harbors Club, Harwichport, Mass., June 12-14.

1939: Reunion Chairman, George Beesley, 10 Keniston Road, Lynnfield Center, Mass.; Baker House, M.I.T. Campus, June 12-14.

1944: Reunion Chairman, F. Scott Carpenter, 36 Middle Street, Hingham, Mass.; Curtis Hotel, Lenox, Mass., June 12-14.

1949: Reunion Chairmen: Walter A. Row, Jr., 29 Longmeadow Road, Weston, Mass.; Stanley V. Margolin, 215 Grove Street, Auburndale, Mass.; Belmont Hotel, West Harwich, Mass., June 12-14.

1954: Reunion Chairman, Robert E. Anslow, 32 Woodland Road, Lexington, Mass.; Curtis Hotel, Lenox, Mass., June 12-14.

1959: Reunion Chairman, David W. Packer, 11 Carver Road, Watertown, Mass.; Chatham Bars Inn, Chatham, Mass., June 12-14.

M.I.T. Varsity Athletic Events Coming Up

Pistol
March 7 Brown, Massachusetts Home

Rifle
March 7 Norwich Away
13 Wentworth Home

Skiing
March 1 M.I.T. Invitational.
14, 15 Lowell Tech Invitational

Squash
March 6, 7 N.I.S.R.A. at Dartmouth

Swimming
March 7 Coast Guard 2:00 Away
13, 14 N.E.I.S.A. at Massachusetts

Indoor Track
March 7 I.C.A.A.A.A. at New York

Outdoor Track
April 4 Quantico 1:00 Away
14 Brandeis 4:00 Home
18 Tufts 1:00 Away
25 Williams 12:30 Home
Penn Relays at Philadelphia

Wrestling
March 6, 7 New England

Baseball
March 31 Salisbury 2:00 Away
April 1 Johns Hopkins 3:00 Away
2 Adelphi 1:30 Away
3 Stevens Away
7 Boston College 3:00 Away
11 Wesleyan 2:30 Away

15 Bowdoin 3:00 Home
18 W.P.I. 1:00 Home
21 Tufts 3:00 Away
22 Harvard 2:30 Home
25 Middlebury 2:00 Away
29 Northeastern 2:00 Away
May 2 Bates 2:00 Away
7 Brandeis 4:00 Home
9 Coast Guard 1:00 Home
13 Boston University 4:00 Home
15 Trinity 4:00 Home

Heavyweight Crew
April 11 Boston University Home
18 Columbia Away
25 Yale Home
May 2 Compton Cup Home
9 Dartmouth, Wisconsin Away
16 E.A.R.C.
June 20 I.R.A. at Syracuse

Lightweight Crew
April 18 Durand Cup at Hanover
25 Biglin Cup Home
May 2 Geiger Cup at New York
9 Callow Cup at Philadelphia
16 E.A.R.C.

Golf
April 2 Johns Hopkins 1:00 Away
4 Maryland, Princeton 2:00 Away
16 Williams, Trinity Away
21 Harvard 1:00 Away
24 Tufts, Wesleyan 1:00 Home
27 Greater Boston Away

May 1 Bowdoin Away
2 Colby 1:30 Away
7, 8 New England at Vermont
12 Springfield, W.P.I. 2:00 Away

Lacrosse
March 31 Maryland 2:00 Away
April 1 Loyola 3:30 Away
2 Hofstra 1:30 Away
3 Adelphi 2:00 Away
8 Harvard 3:00 Away
11 Holy Cross Away
18 New Hampshire Away
22 Massachusetts 3:00 Home
25 Amherst 2:00 Away
30 W.P.I. 3:00 Home
May 2 Bowdoin 2:00 Home
7 Tufts 3:30 Home
9 Trinity 2:00 Home
13 Wesleyan 3:00 Away

Tennis
April 4 Georgetown 2:00 Away
8 Harvard 3:00 Home
11 Brown 3:00 Away
13 Brandeis 3:00 Home
17 Navy 3:00 Home
23 Bowdoin 3:00 Home
24 Colby 3:00 Home
25 Wesleyan 2:00 Home
29 Amherst 3:00 Away
May 1 Dartmouth 3:00 Home
2 Williams Away
9 Trinity Away
15, 16 New England

Sloans See Who's Who In New York

*M.I.T. men interview bankers
and noted business executives*

FEW young businessmen have such envied encounters as do the Sloan Fellows of M.I.T. when they meet and converse for a week in New York with such top men in finance and industry as Alfred P. Sloan, Jr., '95, Frederick Kappel, David Rockefeller, Thomas Watson, Henry C. Alexander, and Roger Blough. At such a time, the Faculty of the School of Industrial Management would happily swap places with the students.

The outstanding event of their week in New York last winter was a luncheon with Mr. Sloan, whose philanthropic foundation, together with the Fellows' sponsoring organizations, has enabled more than 500 young men to participate in the M.I.T. program of executive development. For this meeting, the Sloan Fellows prepared questions in advance, which Mr. Sloan answered



Charles W. Buck spoke to the Sloan Fellows at the U.S. Trust Company.

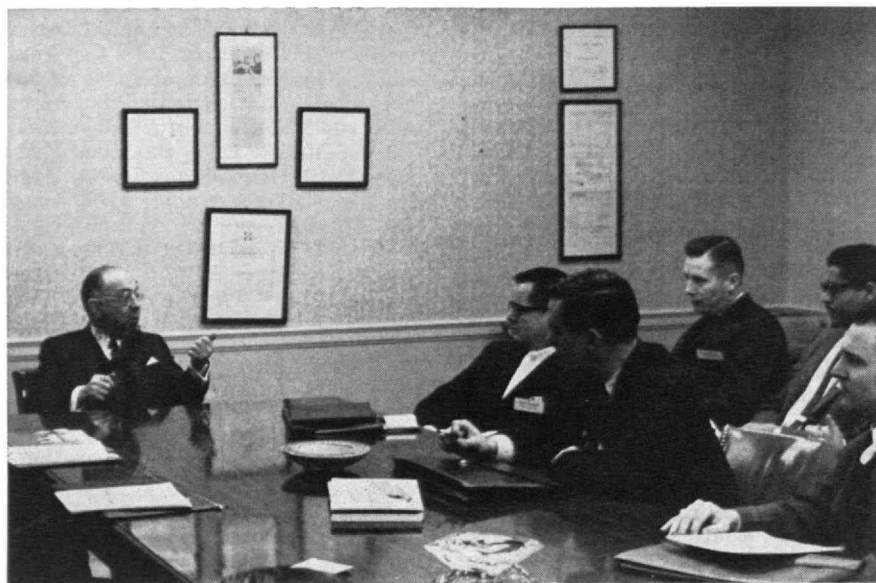
with wit, knowledge, and amazing vigor. He dealt sagely and unequivocally with questions about General Motors policies, the development of the Sloan Fellowship Program, the qualities of industrial executives, and the services of industrial leaders in the Federal Government.

The banks and investment houses visited included Merrill Lynch, Pierce, Fenner and Smith, Inc., George J. Leness, '26, President; New York Stock Exchange, R. C. Lawrence, Vice-president; Brown Brothers Harriman & Company, J. Eugene Banks, Partner; First National City Bank, George Moore, President; U.S. Trust Company, Charles W. Buck, President; Goldman, Sachs & Company, Sidney J. Weinberg, Partner; Morgan Guar-

anty Trust Company, Henry C. Alexander, Chairman; Lehman Brothers, General Lucius Clay, Senior Partner; Chase Manhattan Bank, David Rockefeller, President; and W. R. Grace & Company, hosted by a number of their executives.

In addition, the "Sloans" called on the following companies and their top officials: Union Carbide Corporation, Kenneth H. Hannan, Executive Vice-president; Underwood Corporation, Guido Lorenzotti, President; Radio Corporation of America, E. W. Engstrom, President; Pan American Airways, John C. Leslie, '28, Vice-president; Lever Brothers Company, W. H. Burkhardt, Chairman; Metropolitan Life Insurance Company, Gilbert W. Fitzhugh, President; International Business Machines Corporation, Thomas J. Watson, Jr., Chairman; Standard Oil Company (N.J.), M. L. Rathbone, Chairman; U.S. Steel Corporation, Roger M. Blough, Chairman; American Telephone & Telegraph Company, Frederick R. Kappel, Chairman; and Western Electric Company, H. I. Romnes, President.

The main purpose of the week in New York was to learn firsthand the ideas, viewpoints, and philosophies of executives—particularly with regard to the study of financial management. The Sloan Fellows put a great deal of careful preparation into each meeting: studying records of the companies, their historical development, financial statements and annual reports. They received in return candid and searching reflections.



Sidney J. Weinberg spoke to the visitors from M.I.T. at Goldman, Sachs and Co.

Sloan Fellows

Marlow O. Alsager, '60, has been transferred to the position of Director, Cost, Factory and General Accounting, Pontiac Motor Division of General Motors Corporation. . . . **George W. Bates, '62**, has been promoted to Assistant Vice-president, Southern Bell Telephone and Telegraph Company, Atlanta, Ga. . . . **Milton Zimmerman, '64**, formerly assistant plant manager of Campbell Soup Company, Chicago, has been promoted to Staff Production Manager of Campbells' in Camden, N.J. . . . **Raul G. Mendez, '55**, died December 22, after a prolonged illness.—**Peter P. Gil**, Secretary, Room 52-455, M.I.T., Cambridge 39, Mass.

Senior Executives

Max M. Beasley, Spring, 1963, is now president of Singer-Cobble, Inc. of Chattanooga, Tenn. . . . **Robert Stuart, Fall, 1959**, has recently been elected President of National Can Corporation in Chicago.

Twenty-seven senior industry and business leaders from 11 states and five foreign countries took part in the 10-week Fall Executive Development Program at the M.I.T. School of Industrial Management. They were: Charles W. Allen, International Business Machines Corporation; William S. Baldwin, Chesapeake and Potomac Telephone Company of West Virginia; Ashok Nath Banerji, Ministry of Steel and Heavy Industries, New Delhi, India; Frank H. Barker-Benfield, Urwick Management Centre, Slough, England; Robert W. Boesel, Lockheed Missiles and Space Company; William E. Bonnet, Sun Oil Company; Edward R. Bradley, Libby, McNeill and Libby; Lester G. Crunkleton, B. F. Goodrich Chemical Company; Merle W. Dargel, Caterpillar Traction Company; John W. Darin, United Show Machinery Company; Walter B. Dingle, Imperial Oil Ltd., Canada; Donald E. Fish, Thiokol Chemical Corporation; Richard W. Freund, First National City Bank, New York; Thomas A. Gatliffe, Angostura Bitters, Port-of-Spain, Trinidad; Robert J. Gumber, Hughes Aircraft Company; John L. Hooven, Ford Motor Company; William A. Keeler, Atlantic Refining Company; Waldo S. LaFon, Kentucky Power Company; Peter W. Murphy, International Computers and Tabulators, Ltd., London; Mohammed A. Nabegh, Iranian Oil Refining Company, Abadan; Charles A. Ormsby, John Hancock Mutual Life Insurance; Robert C. Perry, Pittsburgh Plate Glass Company; Donald E. Procknow, Western Electric Company, Inc.; Robert R. Rumer, Monsanto Chemical Company; Howard H. Scott, Bird-Johnson Company; James C. Sheehan, Westinghouse Credit Corporation; and Peter D. Tew, Shell International Petroleum Company, Ltd., London.

Class News

'96

Ralph Henry has been offered a location for his collection by Dr. Bush of Syracuse University. "Who's Who" listed a raft of noteworthy buildings designed by Henry and the late Irving Merrill and led to the selection by the overseers of the University of Henry's work for exhibition. Dr. Bush suggested a fireproof room, set apart but part of the Fine Arts Collection of the University Library; the room would serve for consultation or copying by undergraduates and others. It would serve as a repository for the collection of instruments Henry used in the daily work of preparing working drawings, trade specifications, contract forms, letters between architect and owner or contract, and the usual correspondence necessary for building. Some landscape planning material is included in the collection. Ralph is quite pleased to have been selected and is already busy choosing and arranging the collection.

Will Coolidge's friend and associate in the G.E. Research Laboratory, John Bellamy Taylor, '97, died December 21. He was a research engineer for more than 30 years and developer of equipment which first made sound visible and light audible. He demonstrated the projection of sound through a beam of light from the airship 'Los Angeles' to the G.E. plant below, gaining universal acclaim. Taylor was also an accomplished musician and lectured on music and acoustics at Union College. Both he and his wife, the late Marcia Jones, were graduates of Brookline High School. He leaves three sons: Telford of New York; Jerome of Detroit; Irving of San Francisco; and a daughter, Mrs. Ann Taylor Gross of Pennington, N.J. . . . **Milton Ernest Moore**, Course II, died in Arlington, Mass., on September 20, 1963. He was in the market gardening business. The large market gardens that were in Arlington and Belmont when he started in that business have almost disappeared and their sites have been taken for residences. . . . **William E. Haseltine** died in Redlands, Calif., on November 23, 1963; he had been in a rest home for a year with a broken hip. His wife Florence (they were married almost 50 years) wrote to tell us the sad news. Their son, William R., '34 (and Ph.D., '38) is a scientist at the Naval Ordnance Station at China Lake, Calif.; Edwin C. is an eye specialist at Redlands; daughter Margaret Smith (Smith, '38, Yale, '41) lives in Seattle. Mrs. Haseltine has lived in Redlands for three years but intends to return to the home they retained in Ripon, Wis. The class appreciates the nice letter she sent.

Jack Eynon still maintains his house in San Diego but is now situated very comfortably in a retirement home at

8585 Mesa Boulevard, LaMesa, Calif. He quite enjoyed the golf championship in Brookline at The Country Club on television, and said to tell **Hedge** that he still cherishes the taste of the real lobster served at the dinner he gave us at The Country Club: "Out here we lack the delectable morsel that you New Englanders crack and pry out."—**James M. Driscoll**, Secretary, 129 Walnut Street, Brookline, Mass.; **Henry R. Hedge**, Assistant Secretary, 105 Rockwood Street, Brookline, Mass.

'97

Pete (Howard) Noble has heeded my request for news. He reported himself as well and sent me a clipping of a wedding at Pittsburgh attended by a young lady of Hastings, unknown to me. At over 90, Pete is proving a better correspondent than 99 per cent of the remaining 27 or 28 men in the class. Thank you Pete. . . . Our sad news is of the departure of **Irenée duPont**, the last of the three famous M.I.T. brothers, Pierre, Irenée and Lamont. Irenée was perhaps the most nationally known member of '97. His successes were in business, chemical manufacture and philanthropy. He was, at graduation perhaps the youngest member of the class. He was a great supporter of the Class of '97 and of M.I.T., a faithful reunioner at East Bay Lodge, Osterville; but he could not get to our 60th Reunion at Dedham, Mass. . . . Some years ago we lost two other nationally known classmates: **Tom Weymouth**, known for his work on high pressure gas lines, and **Walter Spear**, famous for his handling of the New York City water system. No doubt there are other members almost as well known in their own special fields with whom I have had no contact in my own limited field. My best to all of you for a successful 1964.—**George R. Wadleigh**, Acting Secretary, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

'01

You should all have received the annual Class Letter when you read this. It was written in January and little news was available. I have a printed report from **John Boyle** in Washington telling of a case in connection with patents in which he was successful. . . . I also have letters from **Bob Derby**, **Phil Moore** and **Ed Davis** expressing their sorrow over the loss of **Willard Dow**. . . . I hope to have more news when you have read the Class Letter.—**Theodore H. Taft**, Secretary, Box 124, Jaffrey, N.H.

'02

There is but one item to be reported to the class, and it is a pleasant one. A Christmas card received from **Lewis Moore** announced that on December 14, at Houston, Texas, he was married to

Happy Birthday

During March one alumnus will celebrate his 90th birthday; and 4 and 13 Alumni will celebrate, respectively, their 85th and 80th birthdays, as listed below with dates of birth.

March, 1874—**HAROLD S. BOARDMAN**, '96, on the 31st;

March, 1879—**HARRY J. LOHBILLER**, '01, on the 5th; **FREDERICK W. SMITH**, '01, on the 7th; **ROBERT S. BALDWIN**, '02, on the 25th; and **EDWARD H. DAVIS**, '01, on the 27th;

March, 1884—**LYOYD T. BUELL**, '05, on the 2nd; **LEWIS M. VAN GIESON**, '25, on the 4th; **ROBERT P. WALLER**, '10, on the 9th; **ROBERT E. CUSHMAN**, '06, on the 10th; **ARTHUR S. THOMAS**, '06, on the 12th; **KENNETH J. CAMPBELL**, '09, on the 14th; **MERTON BELCHER**, '09, on the 15th; **HELEN R. HOSMER**, '06, on the 16th; **JOSEPH V. SANTRY**, '06, on the 18th; **CHARLES L. ANSON**, '06, on the 23rd; **CHESNEY H. CRISWELL**, '08, on the 25th; **THEODORE P. MOOREHEAD**, '05, on the 27th; and **ARTHUR L. DERBY**, '03, the 30th.

Mrs. Alice Williams. They will live in Vero Beach, Fla., and the mail address is still P.O. Box 3128, Sta. 1. We hope that we shall meet them on Alumni Day.—**BURTON G. PHILBRICK**, Secretary, 18 Ocean Avenue, Salem, Mass.

'03

Because of the absence of news about our energetic classmates, and the somnolence of the winter season, your secretary thinks it appropriate to recall again our 50th Reunion in 1953 after enjoying our recent 60th. Our cherished Secretary **Jim Cushman** was there and related in the notes that the Commencement exercises took place on June 12, when we were honored by a position in the procession immediately following the corporation. With Jim acting as marshal, we turned out 35 strong in caps and gowns supplied by the Institute.

"Following the graduate exercises," Jim noted, "we were guests of President Killian, '26, at a luncheon in DuPont Court. The afternoon was spent inspecting the buildings and renewing old acquaintances. It was considered a fine arrangement to be able to have rooms at Burton House, one of the student dormitories, and '03 men, many with their wives, began checking in on Thursday afternoon. It was a real thrill for Roy Gould, Gibbs and Jim Cushman to greet each arrival.

"Friday night was the Class Dinner, at which 54 men and women were seated in the Faculty Club. **Ike Atwood** was master of ceremonies, **Fred Eustis** gave the greeting to all present, and Cushman, as secretary, read many letters of regret from those not able to be present. Then **Ralph Howes** sprung a surprise by asking **Ed Ruxton** to make the presentation of a

wrist watch to **Fred Cushman** and **Howard Morse**, followed by a gift in the same manner to Jim Cushman. Your secretaries were deeply grateful and appreciative of the many good things said, some far too flattering, which accompanied the gifts. **Ike Atwood** then called on Professor **Andrey Potter**, **Paul Parker**, **Howard Morse** and **Bill Mitchell** for brief remarks, and the class then elected the present secretaries, **Fred Eustis** and **Jim Cushman**, for another 50 years. The music of a trio led the singing of old songs and new, adding much to the pleasure of the event.

"Saturday morning, members' autos and a bus transported about 60 joyous Alumni to Fred Eustis' estate in Milton, where we were the guests of Fred and his wife at an informal reception and luncheon on the terrace. Dr. Compton and President Killian honored the occasion by their presence and a memorable picture was taken of the group, to be later shown in The Review. Mrs. (**Margaret**) **Shurcliff** gave a lesson in handbell ringing to four of our members, that produced much fun for both ringers and listeners.

"Following the reception about 40 of the group drove to Coonamesett Ranch on Cape Cod, the remaining classmates returning to Cambridge and other engagements. A fine dinner was enjoyed at Coonamesett and the evening and a day Sunday was spent visiting together and really getting to know each other again. Monday morning all drove back to Cambridge, arriving in time for the Alumni luncheon, where as the 50th year class we occupied a table to ourselves and were bountifully served. Fred and Mrs. Eustis sat at the head of the table, as they had at Dr. Killian's luncheon Friday. Several new faces appeared: Tom Sears, Mrs. Sears and their daughter Victoria and Arthur Cavanagh were gladly welcomed.

"The final event was the Stein-on-the-Table Banquet at the Statler, Monday night, when, it was reported, 22 men and about 8 women, attended. Another enthusiastic classmate, **Andrew Hepburn**, at last joined our group. In conclusion our secretaries were well pleased with the entire attendance and from the letters of appreciation we received, we know that those attending had an unusually and surprisingly good time, with meagre thought but earnest desire for their future 60th."—**John J. A. Nolan**, Secretary, 13 Linden Avenue, Somerville, Mass.; **Augustus H. Eustis**, Treasurer, 131 State Street, Boston, Mass.

'04

There are a few stirrings of interest in our proposed 60th Reunion, and it is hoped that as June approaches they may develop into a worthwhile gathering. Why not look over the roster of living members of the class and urge some old friend to join you for the occasion? It is doubtful if any important reunion of our class will be held after this June, so we ought to make a real effort to get a maxi-

mum number present. If you haven't replied to our January letter we hope you will drop a line or two.—**Carle R. Hayward**, Secretary, Room 35-304, M.I.T. Cambridge, Mass.; **Eugene H. Russell, Jr.**, Treasurer, 82 Devonshire Street, Boston, Mass.

'05

It was a Merry Christmas. Ruth and I spent a week at Thanksgiving and a long, long, weekend at Christmas at our daughter's in North Reading, Mass., but in between I was housed on account of a very low grade virus, which lingered much too long. However, during my better moments I was able to get my Christmas cards and many other things out of the way. Also to enjoy the cards and messages from my classmates, nearly 50 in all. Because of the number I am taking this means of acknowledging them—to the Bill Balls, the Fred Pooles, the Len Cronkhites, the Bill Spaldings, the Mildred (Wheeler) Tompkins, the Warren Wells, the Ted Steels, the Charlie Smarts, the Hub Kenways, the Court Babcocks, the Huntington Smiths, the Myron Helypers, the Bob Luces, the "Ski" Lombards, the Wallace MacBriars, the Bob McLeans, the Colonel Longleys, the Andy Fishers, the Bert Piles, the Bob Beards, the Roy Allens, the Art Balkams, the Merrill Bartletts. Also A. Senior Prince, Sam Seaver, George Rhodes, Art Russell, Willard Simpson, Harry Charlesworth, Roy Walker, Gil Joslin, Laurence Fuller, Walter Fichler, Henry Buff, and Sid Caine. . . . From the fact that these classmates did not mention their health, we can probably assume they are at least "so-so, considering." **Dick Senger** says that the limp due to a very bad accident four years ago has almost disappeared but "I have become so attached to using a cane, that it would break my heart to dispose of it."

. . . **Carleton Atwood** reminds me again of his wedding in October. Tells of a honeymoon in the Middle West and ends with "Stopped at Niagara Falls on our return so as to make it seem more real." Course-mates in VI might want to look them up if near West Acton, Mass. . . . **Lloyd Buell** says: "We go to California for the wedding of a granddaughter at Christmas." **Ed Graham**, in answer to my question as to where Shaw Island is, says: "Shaw Island, WN is all the address we have, and it's enough. Still get around in my canoe when wind permits." Sounds as though he is still rugged. . . . **Jim Rogers** writes: "Still living but my hardest work is keeping the rocking chair moving. Had to quit work because of a 72-year rule. I have lost all contact with the M.I.T. boys. Does any Course XIII fellow remember me?" Which makes me wonder: Doesn't the mention of all these names make you think of incidents at the "Tech on Boylston Street"? Why not contact them and chew the fat by correspondence? I will supply the addresses if you do not have an Alumni Register.

I have two long Christmas letters, one from **Hal Robbins**, the other **Herb Bailey's** annual. Most of these letters have to

do with personal matters and family items, but I have their permission to make these quotes. Hal says: "On March 20 the Phoenix City Fire Department staged a safety-first and fire prevention lecture and demonstration at Orange-wood, and all members were strongly urged by the management to attend. In order to demonstrate the explosive nature of gasoline vapors the demonstrator took an upright heavy glass cylinder about 6 inches in diameter and 30 inches tall. He dropped a small amount of gasoline into it from a medicine dropper and turned to the audience and said: 'This will make a little noise; if any of you are afraid it might startle you, you should cover your ears.' No hint was given that there would be any danger of damage to the ears if they were not covered. He then dropped a lighted cigarette into the vapor-filled cylinder, and there was a terrific explosion which so injured my ears that since that moment I have been unable to distinguish musical tones and, although music sounds just as loud as it did before, it comes through as harsh, rasping discords and monotonies. Speech also sounds as loud as before, but is heavily masked by resonant overtones which are so overpowering in a small room that it is impossible to carry on a conversation at a distance of more than a few inches. Hearing aids have been tried out, but only magnify the distortion and I can hear better without them. I have consulted four different ear specialists, and the consensus seems to be the extremely delicate 'harp-strings' in the cochlea have been damaged and no medical or surgical treatment can repair them. It is a real tragedy to be completely excluded from the beautiful world of music for the rest of one's life, and all due to someone's gross negligence. Well, so much for the ears; now for the eyes, and the news is better." Then follows a long story of the removal of cataracts from both eyes (two months apart) and the consequent inconvenience. Those who have had a similar experience would be interested in Hal's full description. He may have an extra copy of the letter which, of course, is much too long for this column. The same applies to Herb Bailey's letter, but you will be interested in this much on his personal life: "Nothing very unusual with Grandpa except perhaps the naming of one of our county schools for him at the Ranch for Boys. So far I have been unable to bring myself to giving up the privilege of serving on the county Civil Service Commission and School Board even though I realize a younger man would do a better job. My driver's license was limited to one year when renewed in September, and when they will not let me drive even to the county seat I will have to give up all my duties there."

Gilbert Tower says (it is difficult to read parts of your letter, Gib): "My projects now are street cleanings (or is it widenings) and urban renewal." Gib is evidently another one of those "Yes, men" in civic affairs. . . . **Herman Eisele** writes: "Yes, I am still working at consulting engineering, principally on steel drum development and production machinery, as

there is nothing that I would rather do than what I am doing. I am beginning to think that working is habit forming." . . . **Robert Luce** writes from Washington, D.C.: "Things are about the same here. We are both well. Our son, Robert and his wife live in town here." . . . From **Ski Lombard** I receive literature in regard to the United Senior Citizens (U.S.A.) Inc. of which Ski is an officer and diligent worker. This literature recommends the brochure "Stop Thief" by Norman Lombard (\$1.00, the Book-mailer, 232 E. 35th Street, New York City). . . . **Bill Ball** writes: "I am still plugging away with the final phase of a celestial navigation course sponsored by the United States Power Squadrons, along with Howard Claussen, M.I.T. 1916. While neither of us will ever make use of our learning, it keeps the cobwebs from collecting on what passes for one's brains. It is a challenge and we enjoy it."

I have to report the death of **Alfred C. Bedortha** of Windsor, Conn., on September 13, 1963. He was with '05 only two years, taking courses with Professor Prescott. He would have been 94 years old on January 31, 1964. A letter from his daughter tells that he was in excellent health and enjoyed all his faculties up to a year before his last sickness. He was the oldest man in the class. That honor now goes to **Edward C. Smith, V**, now living in Lakewood, Ohio, 86 years last December. . . . All of us will be

Deceased

IRENEE DUPONT, '97, Dec. 19*
FREDERICK MATHESIU, '02, Oct. 23
GEORGE G. BAY, '05, Feb. 27, 1963*
JULIUS A. FURER, '05, June 5*
HARRY L. MOODY, '07, Dec. 20*
EVERETT E. TURKINGTON, '07, Dec. 27*
EDMUND F. HEARD, '08, Dec. 23*
ROY S. WATSON, '08, June 16, 1962
HAROLD H. SHARP, '12, Feb. 14, 1963
RICHARD W. PEATROSS, '14*
OLEN C. NORRIS, '16, July 2
WILLIAM F. JOHNSON, '17, Oct. 8*
ALAN B. SANGER, '18, Dec. 25
THOMAS M. LLOYD, '19
VICTOR N. SAMOYLOFF, '19, Dec. 11
ARTHUR C. ATWATER, '20, June 21*
HENRY W. ERICKSON, '20, Nov.*
STANLEY N. JUTHE, '21, Sept. 2*
WALTER S. ROSS, '21, Oct. 19
WILLIAM DUANE, JR., '22*
LATIMER F. HICKERNELL, '22, Dec. 16*
CHARLES E. SNOW, JR., '23
ROGER E. VALENTINE, '23, Dec.
HOWARD I. FITZ, '24, Nov.*
GEORGE E. APEL, '26, Sept. 14
CORNELIUS M. FLYNN, '26, Dec. 19
THEODORE B. PERKINS, '28, Aug. 8
ARTHUR E. SCHNEIDER, '28, Oct. 3
R. GRICE KENNELLY, '32, Oct. 3*
JOHN M. KIMBLE, JR., '32, Oct. 9
JALO A. KAUPPINEN, '34, Dec. 20
JOHN H. KEATLEY, '34, Oct. 19*
GEORGE S. BAYS, JR., '35, July 1
JAMES R. DUNCAN, '38, Nov. 22*
FREDERICK A. FITZ-GERALD, '38, Nov. 8*
BURNETT M. PITT, '42, Jan. 1*
HANSON E. ELY, '45, Dec. 8

*Further Information in Class News.

saddened to know that **Willard Simpson's** wife, Mary, died suddenly last October. We met Mary at our 50th Reunion, found her so wholesome and charming that we can sympathize deeply with Willard in his loss.

Rear Admiral **Julius A. Furer, XIII** died on June 5, 1963. A letter from Mrs. Furer, answering my letter attempting to express the sympathy of the class, enclosed a clipping from "Shipmate," a magazine published by the U.S.N.A. Alumni Association which I am quoting in full, because it contains a story of national import: "Rear Admiral Julius A. Furer, USN (ret.) died on 5 June at the Naval Hospital, Bethesda, following a long illness. Jay, as he was known throughout the service, will be missed by his classmates and by all who knew him. The word 'brilliant' probably best describes him, but this was not a cold brilliance. His warm personality attracted friends from all walks of life. Jay graduated at the top of the Class of 1901 and obtained a master of science degree at the Massachusetts Institute of Technology on entering the now defunct Construction Corps of the Navy. In his early assignments to Navy Yards he became an advocate of the comparatively new 'scientific management' theories advanced by Frederick W. Taylor and others and helped to put them into practice in the industrial parts of the yards. His keen, analytical mind was an asset in this kind of work, and as his responsibilities grew in such positions as industrial manager of the Navy Yard, Philadelphia, and in the Office of the Assistant Secretary of the Navy, he was able to contribute much to the efficient management of Navy Yards.

"When the submarine F-4 sank off Honolulu in 1915, in over 300 feet of water, he designed submersible pontoons for raising her, a record feat for such a depth. The pontoons, which were built at Mare Island, became available for future salvage operations. Jay was awarded the Navy Cross for supervising the crash production of 450 submarine chasers used against German U-boats in the Mediterranean and Adriatic Seas during World War I. Between the world wars he served as assistant naval attaché at the American Embassy in London, where he represented the United States Navy at the funeral of King George V, and at the coronation of King George VI. On a later assignment he was a member of the Naval Mission to Brazil.

"During World War II, Admiral Furer was co-ordinator of research and development of the Navy Department and a member of the executive committee of the Research Board for National Security. He received the Legion of Merit for his World War II assignments. Jay possessed unusual technical, professional and general knowledge which he employed with exceptional skill in the service of the United States. Over a period of many years he was a regular contributor to the 'Encyclopaedia Americana.' His articles were not merely scholarly and accurate, they were readable, and they dealt with naval matters in a manner which gave an understanding of the significance of

the subject treated, as well as its relationship to other events or developments of importance. After World War II, Furer prepared an outstanding history of the work of research and development in the Navy Department. This was so good that it caused the late Commodore Dudley W. Knox to suggest that he undertake the preparation of a larger work, 'Administration of the Navy Department in World War II,' which was published in August, 1960. This is an accurate, well written interesting and valuable volume. Admiral Furer was buried with full military honors at Arlington National Cemetery on 7 June. He is survived by his widow, Helen E., of 2101 Connecticut Avenue, N.W., Washington, D.C., and a daughter, Mrs. F. Clifton Toal of Atlanta, Ga."

George G. Bay, II, died on February 27, 1963, at his home in Tryon, N.C. I do not remember him. The 1904 Technique lists him as a special student from Ironton, Ohio. A letter from Mrs. Bay, answering my letter expressing the sympathy of his classmates brings the information that after graduating from Case Institute in Cleveland, he took special courses at M.I.T. He entered the mercantile brokerage business but retired in 1927 and moved to Tryon, where he and Mrs. Bay operated the famous Lindsey Vineyard, and also shipped peonies nationwide.—**Fred W. Goldthwait**, Secretary, P.O. Box 32, Center Sandwich, N.H.; **Gilbert S. Tower**, Assistant Secretary, 35 North Main Street, Cohasset, Mass.

'06

As was the case last year and every year the variety and beauty of the Christmas cards is truly striking, and we are indeed grateful for the many we received, from near and far. From the notes some of them contained I will abstract bits of information. . . . **George Burpee, I**, has been on a consulting basis since December but was still going to the office every day. In his letter early in January, George gave me more details: "On December 1 I became a retired partner, formally designated as a consulting partner, after 42 years with the firm—40 years as partner and the last 12 as senior partner. I still have some commitments, but except for that I am as free as a bird and expect to have more time to travel on pleasure than heretofore." So we can picture George winging his way around the world, or to Mars perhaps. . . . **Frank Benham**, as previously reported, was back in Daytona at the old stand after a summer in New England during which he said he saw Jim often. He finds it doesn't take much to keep him busy—some golf now and then. . . . **Chet Hoefler, I**, and Ruth were expecting one daughter from New York to be with them for the holidays but their other daughter and her husband and 10-year-old daughter were expected to be skiing in Austria. . . . **Jim Wick, II**, and Clare enclosed several color photos of their summer home in Rockport on the Mill-

pond and not far from the famous Peg Leg eating place which is near the even more famous Bearskin Neck. Some say we will accept Jim's cordial invitation to stop in and have a lobster claw or hot dog, etc. . . . **Dwight McCain, I**, whose 300-acre fruit orchard was sold to a developer, said it is quite interesting to watch what a couple of dozers can do in a short time; when he goes back in the orchard now he is almost lost! He also said the buyer shows little interest in selling for building (residential) as his main interest is still in his plan for a scientific research institution. Dwight finds it "quite nice to not have labor responsibilities any more. Give most of my time to what has been my hobby for many years, raising purebred sporting dogs. I am quite lost without some puppies to raise. Now have two litters on the way. Should you be in Baltimore or Washington, wish you would give me a call. I am only an hour's ride from either city." . . . **Walter Davol, VI**, likes the custom of sending greetings at Christmas since it brings memories of old friends and old times.

Andy Kerr, that Spanish War veteran, allowed he is 85 and now uses a cane. He has been in and out of the Veterans Hospital during the last five years but still has plenty to keep him busy trying to dispose of some Plymouth property and a lot of English, French and German china; he says there are 1700 pieces altogether, so drop in, gals. . . . **Sid Carr, VI**, and Grace do not expect to visit Hawaii again, having made three trips there since Sid retired in 1946, although both sons still live there. He was ill last summer and lost 20 pounds but now is "feeling fine and raring to go, so we take off on an auto tour of southern California for two weeks beginning December 21." . . . **Bob Cushman, II**, had his hospital sojourn—in fact three of them—last spring and summer and is "feeling fine now. I have regained most of my weight and strength and am driving the car." . . . **Stew Coey, VI**, and Betty are planning to sell their home in Glen Ridge, in which they "have spent 44 happy years, and move to Wilmington, Vt., where we plan to build a joint home with daughter and her family." . . . **Agnes Coe's** card was another typical New England winter scene, by son Kent, of a small railroad station where Christmas trees are being loaded from a truck into a gondola freight car. Those stations are rapidly disappearing, or becoming gift shops, etc. . . . We were also pleased to hear from **Vera Philbrick, Anne Darling, Nellie Cady, and Sadie Sherman**. The gold card of New Year's Greetings from Fay, Spofford & Thorndike announced the 50th anniversary of the firm, of which **Carroll Farwell** is still a director.

A letter early in January from **Percy Tillson, VI**, brought sad news, as Annetta had died on December 13. They had spent Thanksgiving with the son and then went in to New York City for a few days. Percy said they had enjoyed that visit but his wife had contracted a cold and back home in Harrisburg the doctor sent her to the hospital. She was

scheduled to be up the next day when the end came suddenly. Percy has our sincere and deep sympathy. . . . Another classmate had a similar experience right after the holiday when **George Guernsey's** wife Elsie died suddenly on December 27. Marion and I attended the memorial service for her and saw their three married daughters. Elsie had lived in Wellesley since childhood, and Marion and I had enjoyed knowing her these many years. George, too, has our deepest sympathy. . . . **Fred Earle's** address is now 753 James Street, Apartment 303, Syracuse 3, N.Y.—**Edward B. Rowe**, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

In December the Alumni Register notified me of another change of address for **Harry Moody, X**; on December 28, I had a letter from Harry's son Robert L. Moody, '34, from Edgewater, N.J., telling me that Harry had died in Danvers, Mass., on December 20, 1963, after a short illness. Burial was in the Mt. Prospect Cemetery, Amesbury, Mass., on December 23. I wrote to both Mrs. Moody and to Bob, offering the sympathy of the class and asking for further information about Harry's death. So far, this has not been forthcoming. We in the Boston area will miss Harry at our dinners and Alumni gatherings, as he was a most faithful attendant. He missed only two of our class reunions since graduation—the 5th and 45th. At these reunions he and **Oscar Starkweather** were inseparable and always up to some kind of mischief. At the time of his death, Harry was a Council representative of the M.I.T. Club of Sao Paulo of Brazil, South America. . . . Perhaps some of our architectural members will recall **Ernest F. "Duke" Lewis, IV**. Our records show that he attended our 35th Reunion in 1942 and that he was a member of the architectural firm of Gugler, Kimball & Husted of 101 Park Avenue, N.Y. His death occurred January 18, 1950. Recently, a drawing that he did at the Academy of Rome was acquired by the Cooper Union and now hangs in the Study Hall of that institution. The Union has requested Mrs. Lewis to will to them other examples of Duke's original drawings. It would have been nice if this recognition could have come while Duke was still alive. We of the class are pleased to know of another instance where an '07 member has left an imprint on our civilization and something for generations to admire. . . . A letter from **Seymour Egan, XIII**, from Wakefield, Mass., enclosed an obituary notice from the Boston Globe of the death of **Everett E. Turkington, VI**, on December 27 at Melrose, Mass. Seymour expected to attend the funeral and represent the class. Services were held at Robinson Chapel, 809 Main Street, Melrose, on Monday, December 30. Everett is survived by a son and married daughter. Our class records only show that for many years he served as chief electrical engineer for

the Associated Factory Mutual Fire Insurance Company of Boston and had retired some time ago.

Phil P. Greenwood, VI, read my appeal in the November Review and mailed to me a check to feed the "07 Kitty." He also sent me an interesting letter in which he said that he always read the '07 notes in The Review as soon as the magazine arrived. I felt quite complimented. Phil celebrated his Golden Wedding anniversary this past December. The early part of 1963 he and his wife spent two months in Florida. They were also very pleased to see their granddaughter off for Europe with the Thiel College Choir from Idlewild Airport the last of June. Phil reports he is in excellent health and despite his 79 years is active in hand-spading his garden plots and running a newly acquired power mower. Last December a surprise snow storm in the Maryland area gave him seven inches of snow to shovel. He must have a different makeup from most of us, for one sentence reads, "I have always rather enjoyed shoveling snow." . . . I have written a number of birthday letters to members of the class as they have reached their four score milestone. In these letters, besides congratulations, I have asked for information about families, retirement, hobbies, and other activities. This has been done with a desire to get news for these class notes. If you are fortunate enough to have reached this full span of life, please write. So far, results have been very meager. . . . All the class received a treasurer's report and request for financial aid in January. If you have mislaid your letter and failed to write to me, it is not too late. So write today. Your name on a check will be accepted in place of a letter. Please include your Zip number.—**Philip B. Walker**, Secretary and Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould**, Assistant Secretary, 409 Highland Street, Newtonville, Mass.

'08

Brief mention was made in the January news of the death of **N. Leroy Hammond**. The following from The New York Times will be of interest. Leroy was a real engineer. "N. Leroy Hammond, deputy chief engineer in the construction department of the Board of Water Supply of New York City since 1952, died of a heart attack at his home [in Ellenville]. He was 77 years old. Mr. Hammond had worked for the board since 1936 when he was named division engineer. Earlier he was division engineer in charge of constructing the Quabbin Reservoir in Massachusetts for the Boston Water Supply Commission. In his work for the New York Board, he administered and supervised work on more than 90 contracts exceeding \$300,000,000 for dams and reservoirs in the Catskill area. He was born in Newport, R.I.

"Since 1955, when the preliminary work was undertaken, he had been in charge of the Cannonsville Reservoir, built on the west branch of the Dela-

ware River. He was also in charge of building a giant earth dam for this reservoir and three others, all among the largest in the country: the Merriman Dam for Roundout Reservoir, the Neversink Dam for the Neversink Reservoir, and the Downsville Dam for the Pepacton Reservoir. Earlier this year, he completed work on the West Delaware Tunnel, which is 43.7 miles long and will divert water from Cannonsville to Roundout Reservoir at Grahamsville in Sullivan County. The tunnel, passing under the Catskill foothills and river valleys, is an average 1,000 feet below the surface, with a minimum cover of about 300 feet. Besides tunnels and dams, Mr. Hammond built nearly 150 miles of highways to replace those inundated by the reservoir waters. Mr. Hammond was also associated with work on the Roundout Reservoir, Delaware Aqueduct, Grahamsville Sewage Disposal Plant, the Neversink Reservoir, and the East Delaware Tunnel, which is 26 miles long. He was a fellow of the American Society of Civil Engineers, and a member of Beta Theta Pi fraternity. Surviving are his widow, the former Alice Keane; a son, N. LeRoy, Jr.; a daughter, Mrs. Priscilla H. McCoy; and four grandchildren.

We are sorry to report the deaths of **Edmund F. Heard** on December 23, in the Mary Immaculate Hospital, Newport News, Va.; also that of **Rodolfo Ogarrio** in Mexico City, Mexico, on January 17, 1957; and that of **Lock Davidson**, of Melbourne, Fla., on September 2. **Paul H. Heimer** of College Park, Md., died on September 1, 1959. . . . James Lear Gurney, son of our late classmate, **Harold Gurney**, was married to Florence Maxine Carpenter on December 8 at the Church of Our Saviour in New York City. Young Gurney has a doctor of science degree from the Institute.—**H. Leston Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles, 3d**, Treasurer, 26 Bullard Road, Weston 93, Mass.

'09

As we have obtained reservations at the New Ocean House at Swampscott for Sunday, June 14, for our 55th Reunion, there is little for the Reunion Committee to do until early spring. Moreover, we have received a notice from Ralph H. Davis, '31, who is deputy chairman of the 1964 Alumni Day Committee, stating that the committee will shortly complete its program making Alumni Day an integral part of the reunion class programs. An advance copy of this Alumni Day program is being sent to our committee to facilitate co-ordinating our program with that of Alumni Day. Notice of the reunion plans will appear in these class notes and will be mailed to the class. Three members of our committee, **Art Shaw, I**, **George Wallis, II**, and **Francis Loud, VI**, were in Florida in January, but we are able to communicate with them when necessary.

In the January Review we included a short note from **Rea Blankenbuehler, X**, mailed in Kenya, Africa, in which he

stated that he would be home by Thanksgiving. Recently the Alumni Office received the following from him mailed in his home town, Elizabeth, Pa.: "Will you please see that this note gets in the 1909 alumni notes? I mailed a notice like this to the class secretary from Nairobi but I guess he did not receive it. 'R. E. Blankenbuehler, X, just returned from a three months' African Safari. He visited most places of interest from Cairo to Capetown. He was especially interested in photographing the wild animals, of which he saw thousands.'" It is clear that the class secretary did receive the notice from Africa and he immediately submitted it to The Review. However, at least six weeks intervene between the sending of the notes to the Alumni Office and The Review's delivery to Alumni. . . . A letter came to **John Davis, II**, from **Harold Paine, X**, in answer to a recent Christmas greeting card and note. Harold, before coming to Tech, was graduated from Brown where he played hockey and captained the Brown baseball team. When at M.I.T. he played two years, 1908 and 1909, on the hockey team. He writes as follows: "I certainly remember the wonderful days of 1909. What a time we had! In those early college days we never know how happy we are or perhaps should be. It is more frustrating that old friends are inexorably pushed apart by the furious pace of modern living. We have been in Florida for each winter for 12 years, but our summers are in good old Cape Cod, address Box 411, South Yarmouth, Mass. Actually reside in West Dennis, but we use South Yarmouth post office. I cannot close without recalling the unusual situation which obtained due to my attendance and hockey playing both at Brown and M.I.T. You will remember that at Brown I got two goals to beat M.I.T. and then at M.I.T. I helped beat Brown. Have forgotten whether I got two goals but did get at least one. Many times I have met men who were Brown or Tech alumni and spoke (immodestly) of the hockey affairs."

—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis**, Wenham, Mass.; **Francis M. Loud**, 351 Commercial Street, Weymouth, Mass.

'10

I have no current class news so will include a few more letters from classmates received in answer to my recent appeal for news: **Henry C. Perley** writes: "It has taken me over a month to comply with your request for 'interesting items for Class News in The Review.' I always look in The Review for Class News, particularly for 1910, so I believe that I should contribute something. I must say that what I have to relate in the way of activities and accomplishments might not be too interesting to many, but I will enclose a few statistics. In 1925 I went to work in the drafting room for Davis & Furber Machine Company, manufacturers of woolen textile machinery, in North

Andover. I have been with this company continuously since then until this summer. In May I was stricken with what the doctor diagnosed as shingles. It proved to be quite severe and long drawn out for me. In fact I still have a reminder left of it. So after being on sick leave for about three months I decided to retire, and retirement is my present status. Your request mentioned 'family, children, grandchildren and great grandchildren.' I have three children and seven grandchildren, five boys and two girls. The youngest grandson is 1½ years old and the oldest 20, now in the army and located presently in Germany. There are no great-grandchildren. I have contributed a little for your class notes."

Philip Devlin writes: "My connection with the Class of '10 at M.I.T. was of such minor duration (about five months) that I doubt if my later activities really rate such a report. However, if it will help you in your excellent job as class secretary, here it is in order: 1906-07—Freshman in Course IV-Architecture, M.I.T. (The severe Boston winter of 1907 sent me back after one semester to my native New Orleans.) 1907-08—As sophomore in Architecture—Tulane University, New Orleans. Member of Tulane Chapter Tau Lambda of Delta Kappa Epsilon (Deke). Abandoned Architecture for business at half term. 1909-24—Engaged in naval stores business in Southern Pine Belt. Married April 11, 1912, to Frances C. Moore. Three children and six grandchildren. Celebrated our Golden Wedding Anniversary in 1962. 1924 to present: practicing as public accountant in Florida. That about covers it! The amazing thing to me is that after a short stay of five months at M.I.T. and with the lapse of 57 years since then, you are able to keep track of me and my whereabouts." . . . **Atwood Collins Page** writes: "I was about a year in regaining my health after leaving M.I.T. I worked for several companies in Hartford and then did cost work and estimating for the Whitney Chain and Manufacturing Company, where I was employed for over 40 years. My wife and I keep a small apartment in Hartford, but we are residents of Glastonbury—most of our mail goes to the Hartford address. I have two houses and plenty of land—about 100 acres here in Glastonbury. We have two sons and a daughter, all married, and eight grandchildren. My oldest son lives in the house next door. My other son is working for Shell in California and my daughter's husband has charge of the Boy Scouts' Council at Kingston, N.Y."

Martin S. Tod writes: "Upon arriving home I read mail and was very pleased to receive your letter which brought many pleasant memories of when I was at the Institute. I made careful record in a small book showing dates of attendance and expenses. Some time ago I changed my office location which was quite an undertaking. I have thousands of records. As soon as I meet up with that book I will send a copy of the information showing dates and attendance at M.I.T." . . . **Earl W. Pilling** writes: "I am sure that no member of 1910 would be interested in my career. It has been, since the day of getting my degree, one

of just work—doing about all the engineering and surveying for a town growing from over 10,000 to over 25,000 and of many adjoining towns, and taking no vacations. Also there was a year and a half in World War I including a long stay on the Rhine. (master engineer, senior grade). It all confirms my early cynical opinions based on Omar, the Book of Ecclesiastes (by Koheleth) and the next to last verse of 'Garden of Prosperine' by Swinburne. I have a library of 2,500 books covering all thought dating from the Sanskrit to the present, and all classical art. I have 750 records of classical music, an earlier period of camera slides, and a love for a flower garden. Every year I give 'Mums' to over 100 families. My enthusiasm is for Michelangelo (I have read eight lives of him) and Beethoven records; I hate all modern art and music. A shock seven years ago killed all of my retirement plans to see Europe, as I know all of the museums, cathedrals and ancient ruins and history of the whole, mostly from books. I have just retired as long-time president of the Dedham Historical Society, and am vice-president and chairman of the loan committee of Dedham Co-operative Bank, which gives me two afternoons a week of enjoyment. I have an engineer daughter and engineer son-in-law and three grandchildren, all 3,000 miles away. I am best described as "semi-retired,"—a registered engineer and surveyor with a few bridges and dams and many streets and sewers to my name. My wife and I have lived in the same house in Dedham for 41½ years."

Spencer B. Lane writes: "Got retired some six years ago from active construction work, by operation of the calendar, not voluntary. My wife died more than three years ago, and last August I remarried and left San Francisco after 35 years to move to McAllen, Texas. My present wife and I have a home here. During the depression I had a typewriter that wasn't busy so kept my credit good at the grocery store by writing fiction for the pulps. Discovered the fact that once you cash an editor's check you get the habit, and it is almost as difficult to break the habit as to break the habit of using heroin. When retirement caught up with me I turned a hobby into a business. Now I am doing part-time editorial work for the local newspaper, a daily. Half a day is about all I can take due to damage in World War I from mustard gas. I was serving in France with the Canadian Expeditionary Force, having been turned down because of old age by the Royal Air Force as I was over 25 years old. They said anybody over 25 should have more sense than to fly even the latest form of Jennies operating then. My doctor says I should be good for another 20 years. Before I remarried I didn't give much of a damn, but now the prospect is really interesting, in spite of the fact that poor circulation in both legs limits my activities to desk work. During World War II the U.S. Army said I was a has-been, so I spent the time as project manager of \$24 million of construction at the Mare Island Navy Yard. Outside of that, I've lived a life of ordinary routine, including a job on the San Francisco Bay

Bridge, and some anti-commie writing for the F.B.I."—**Herbert S. Cleverdon**, Secretary, 120 Tremont Street, Boston 8.

'11

Allston T. Cushing, I, while sending a change of address to 6638 Belle Pointe, Kansas City, Mo., writes that Mrs. Cushing and he celebrated their 42nd wedding anniversary last June and are both in good health. They have two sons and a daughter, all married, and seven grandchildren. The oldest son is an Air Force officer stationed in Michigan. The second son lives in Arizona, and the daughter in Oklahoma. Allston's hobby is leather tooling. Examples of his handiwork include ladies' handbags, a western type pistol belt with two holsters, billfolds, key caddies, belts, etc. He is an active member and national officer in the American War Dads. Before he retired, Allston was the owner of Cushing and Cushing, Construction Engineers. . . . At Christmas **Paul** and **Ottillie Cushman** sent a three and one-half-page mimeographed Xmas letter which they prepare each year for their friends. (Sallie **Denison** also sent me her copy.) From it we learn that they are still in Oklahoma, are well, and celebrated their 31st anniversary in December. Ottillie's main occupation is keeping up with Paul. A summer trip took them to a convention in St. Paul, Minn., and on to Yellowstone and Seattle for the World's Fair. Of the return via Canada they tell us about visits to Lake Louise and Banff Springs, followed by a super-duper reception by square dancers in Calgary. Before he reached retirement age, Paul was a professor of mechanical engineering at the University of Oklahoma and is now chief engineer for L & S Bearing Company.

In a December exchange of letters with President **Howard Williams**, he sent his best wishes to all '11ers and included the following: "This past summer I took my three grandchildren, with my son and daughter-in-law, and we had nearly three months together in England and the Continent. It took me several weeks to understand the 'modern teen-age language' but it proved a most interesting and fine time for Granddad. It was an experience I shall never forget, a really memorable one. . . . Business keeps me very busy these days, my long-time habit of getting to my office before 8 A.M. still persists. Each year I think I shall start taking things a bit easier but something always comes along that keeps me going at the same pace. When the second World War ended, I brought my son, David, into my business, and he now heads it up as president. . . . Recently we merged our operations into those of Interpublic; the result is the largest advertising agency operation in the world with over 7,000 people working in offices in 160 locations in 37 countries. So you can see that the 'Old Man' is still going and busy."—**John A. Herlihy**, Secretary, 588 Riverside Avenue, Medford 55, Mass.; **Howard W. Williams**, President, 10375 Wilshire Boulevard, Los Angeles 24, Calif.

As noted in last month's letter, **Ken Cartwright** passed away in September at his home in Hampden, Conn. A letter from Mrs. Cartwright advises that Ken retired from the New Haven in 1955, prior to which he was on loan to a South American railroad to make a survey for an extension in the iron mines of Brazil. After his return he devoted his time to furniture refinishing, at which he became an expert. . . . A good letter from **David J. Guy** of 3224 Morrison Street, N.W., Washington 15, D.C., states that he has recovered from the coronary which he experienced late last summer. Immediately on leaving the Institute he became associated with the National Resources Conservation. He spent 25 years with the U.S. Chamber of Commerce in Washington. Later he was president of the American Watershed Council for a few years. After retirement, while he was on the active list of the Cosmos Club, the club had to leave their downtown location in the old Dolly Madison House in Lafayette Square and purchased a house farther out on Massachusetts Avenue. Dave had charge of the moving and became executive manager for seven years, which he states was a very interesting experience. He retired, but not for long as the Columbia Historical Society of Washington, D.C., purchased a large mansion and grounds which needed an executive to manage it. He was active at this until the time of his sudden illness. He would be more than pleased to see any of you when in Washington or vicinity, so make a note of his address above.

Christopher Fallon has left Wayne, Pa., and is now living at 36 Midland Avenue, Berwyn, Pa. . . . A Christmas card from Priscilla and **Jay Pratt** states that they are just leaving for Acapulco Mexico, for their 24th season and hope that some of their classmates may drop in on them during February or March.—**Fredrick J. Shepard, Jr.**, Secretary, 31 Chestnut Street, Boston 8, Mass.; **John Noyes**, Assistant Secretary, 3326 Shorecrest Drive, Dallas 36, Texas; **Eric Kebbon**, President, 1105 Park Avenue, New York 28, N.Y.; **Albion R. Davis**, Class Agent, 38 Sabrina Road, Wellesley 81, Mass.

The holidays are over, the New Year has begun, the virus bugs have been conquered, so on with the news. . . . **Malcolm Lewis** writes that he enjoyed the 50th Reunion photograph but was unable to make out all of the participating classmates, so we sent him an official list. He writes: "I am still trying to support the M.D.s and hospitals here, as well as the druggist. In 1953 while teaching descript at North Carolina State, I began to get a numb feeling in my hands. This has gradually become a form of palsy that greatly restricts my activities." . . . A no-

tice in the Boston Herald announced the demise of **Lawrence A. Bevan** in Dover, N.H., on December 3. He was director emeritus of the Co-operative Extension Department of the University of New Hampshire at Durham, N.H. M.I.T. was not mentioned but our Lawrence A. Bevan's address was Durham, N.H. If anyone has more information we shall be very interested.

Ken Hamilton has finally found time to give us some of the facts and data covering his many business activities over the years. We quote in part: "I retired from my work as a civilian with the U.S. Navy in June, 1962, and since I did not want to hang around the house for my wife to put me to work painting, washing dishes or something, I started a manufacturers' representative sales organization to keep me busy. We operate on the East Coast, mostly in Pennsylvania and New Jersey, selling electrical and mechanical products to industry and O.E.M. accounts." Ken certainly has been a busy engineer, serving numerous concerns and the U.S. Navy as production engineer, sales engineer, general manager, vice-president, and president. Over the past 50 years he has used his engineering techniques in various kinds of manufacture (shoes, hats, pencils, chemicals, machine tools, high frequency radios, ceramics) and in control and maintenance work for several outstanding concerns. He spent nearly two-thirds of his engineering life in charge of the Navy's machine-tool production properties and the disposition and allocation of idle Navy-owned properties. Hamilton has written many engineering articles for professional journals and has addressed several groups, such as the Associated Industries, American Society of Mechanical Engineers, the Plant Engineers Club of Boston, and Industrial Management students at M.I.T. Hamilton is a member or fellow of the Boston Plant Engineers Association; Philadelphia Chapter, American Institute of Plant Engineers; and the A.S.C.E. What a satisfactory life, Ken! You other retirees, send in an account of your life's work, and we shall be happy to include it in our monthly notes. So get your pads and pencils and start writing!

To **Allison Butts**, who did come to our 50th Reunion, we offer apologies, as we mentioned in our notes that Al and his wife would not attend. . . . A letter was received just prior to reunion from **Fredrick Rich**—a masterpiece of common-sense and philosophy. Fred is over 77 years old, lives more or less by himself (his family is spread around currently in Indonesia, the Philippines, Michigan, Maryland, Washington and Massachusetts). Although a member of the Class of '13, he entered Tech with credits from Purdue and the University of Rochester, preceded by his preparation at Rochester (N.Y.) High School, with a period of working for a living sandwiched in between courses of education. Also it was his misfortune to be painfully injured as the result of a bromide explosion in summer school at M.I.T., and a severe hotel fire in 30 degree below zero weather in 1948; then, in 1949, his hospital chart showed "severe coronary thrombosis." This was followed by surgery, and he was

given six months to live if he took care of himself. Fred feels that it is questionable whether he is really a member of the class, but the 1913 jury passes down the ruling that Frederick Rich has always been officially a member of the Class of '13 and is still considered a member in good standing. Your classmates Joe Cohen, Phil Capen, Burt Cushing, Bill Eichorn, Dave Stern and Larry Hart all wish you long years of good health; and keep up that proud and happy concern you have for your fellow man.

Of course, we are envious of several classmates who are spending these wintry days in the sunny climes of Florida or California. We have heard directly or by the underground of the **Gordon Howies**, **Edgar Tafts**, and of course the **Lester Gustins**, who migrate every fall. We have received a newspaper clipping from the St. Petersburg, Fla., Times, December 15 under the caption: "Surrounded by Mementos of Activity, He's Still Busy." This, if you have not guessed, refers to our Class Historian Lester Gustin. The article is headed by a homey picture of Ethel and Lester admiring one of his figurines of plastic which he invented and patented during the depression to keep up their income. This article gives a thumbnail sketch of Lester's life and especially of his business accomplishments and activities, as well as his authorship of two volumes of the Gustin genealogy. The energy and many talents wrapped up in that 250-pound-plus body is quite overwhelming. His business and engineering positions include builder and owner, Winchester Arms apartments, resident engineer, chairman of the tenants board of governors, and investor and leading spirit of the half million dollar co-operative apartment house known as Suncoast Towers, in St. Petersburg, Fla. Lester has lived a very busy and constructive life and listed among his hobbies: creation of intricate charts that forecast the moves of the stock market with accuracy, Class of '13 History; watercolor painting; invention of plastic moldings and figurines. He is also an athlete of no mean stature, and only limited space prevents our elaborating further on Lester's achievements.

George R. Wallace, 3d, has announced a 13 $\frac{3}{4}$ ¢ dividend per share on Fitchburg Paper Company stock. Good going, George; evidently you are not ready for retirement. . . . A delayed clipping has been received regarding the death of **Andrew Vogel** on August 20. Andy was employed by General Electric from 1917 to 1943, when he joined the International General Electric Company; retaining his position as designer of industrial plants, he traveled extensively overseas. He lectured at R.P.I. and was author and co-author of technical articles on natural lighting, heating and designing. Andy held memberships in A.W.S., A.S.C.E., A.S.H.R.A.E., A.I.A., and I.E.S. . . . **Charlie Thompson** is spending the winter in California with his daughter and her family. . . . **Warren Glancy** advises us that a typographical error in the January issue of *The Review* named the place of **Albion Davis'** death "Moonville"; it should have read "Boonville, Mo." . . . It is with a great feeling of joy that your scribe was surprised to receive a phone call from our

own **Bill Mattson**. Bill and **Clarence Brett**, Teaneck, N.J., two of the three founders of the Kappa Sigma Fraternity at M.I.T. in 1912, were head table guests at a banquet jointly commemorating the establishment of the local chapter and the awarding of the Kappa Sigma "Man of the Year" award to Dr. James B. Fisk, '31, President of Bell Labs. . . . **Charlie Brown** writes that he and his nice wife are enjoying Columbus, N.M., with its dusty and dry climate and many flowers in bloom; but, they say, there is not even a frost. They expect one of his sons and family for Thanksgiving and the other son and family from California for Christmas. Keep us posted of your activities. We shall miss you and your ever-ready assistance, particularly at reunion time. . . . We received a Christmas card from **Lammy Lemaire** from England, and by this time he is on his way home by way of the Mediterranean; he will arrive in Australia sometime in March, I think. —**George P. Capen**, Secretary, 60 Everett Street, Canton, Mass.

'14

Three months from now we will be celebrating our 50th Reunion. Time passes quickly, so if you expect to attend but have not notified **Ray Dinsmore**, you will greatly aid him in making a pleasant reunion by dropping him a note now. There are some classmates who, because of distance or other reasons, will not be able to attend; if you are one of these, it would also be helpful if you would drop Ray a note, as we would like to tell the class about you at the reunion. This will be, inevitably, our last large reunion, so let us make it a fine one. . . . One who has been at most of our reunions, has, unfortunately, forgotten his years. **Johnny (Walter H.) Leathers** has for several years gone to Vermont at Christmastime to ski with his grandchildren; and he has said that he thought his own skill was good for a lifetime. On Christmas Day, while skiing with his family, Johnny broke a leg. Since then he has been laid up at the Springfield, Vt., Hospital. Johnny reports that the healing is coming along fine and before you read these notes he will be back at his home in Hingham, Mass.

Homer Calver has just called to my attention that the name of **Chauncey Bryant** was left off our Class Roster. This is the first name that appears to have been made in error as Chauncey D. Bryant appears as Brown, in error. Chauncey died January 14, 1918 of ptomaine poisoning followed by pneumonia while serving in the A.E.F. . . . Without any further details, word has been received of the death of **Ziang Y. Chow**; at one time he was mayor of Hangchow, China, and was later active in Taipei, Taiwan. Death is reported to have occurred three or four years ago. . . . The passing of **Richard Warner Peatross**, formerly of Dallas, Texas, is reported, but without further details. Peatross was a Phi Delta Theta and during World War I he was a captain of the Ordnance Corps and in-

spector of nitrate plant construction at Sheffield, Ala. . . . Before you receive this Review, you will have received a class letter which includes all address changes filed between November 15 and January 15.—**H. B. Richmond**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.; **Charles P. Fiske**, President, Cold Spring Farm, Bath, Maine; **Herman A. Affel**, Assistant Secretary, R.F.D. 2, Oakland, Maine; **Ray P. Dinsmore**, Reunion Chairman, 9 Overwood Road, Akron 13, Ohio.

'15

"1915 The Class Supreme." When you think of that very descriptive slogan, think of **Al Sampson**, its originator, who is now, 16 months in advance, working on detailed plans and programs that will help to set up a successful and enjoyable 50th Reunion in June, 1965. You will be hearing soon from the committee. Plan to come and be with all the old crowd. . . . All the way from Adams, Algiers and Andersons to the Youngs and Zepfers, the 55 Christmas cards we received from classmates and their families warmed our hearts with a fine old friendly feeling. **Phil Alger** wrote he might come here to the Massachusetts General Hospital. We will look for him and report to you on his condition. . . . **Herb Anderson**: "It's remarkable how we old sinners have survived, but then with our 50th coming up, I suppose some of us try to disappoint the Deity and have a holdover." Well, I do hope there will be lots of us left for our 50th. . . . **Larry Bailey** saw **Herb** and **Alice Anderson** in Philadelphia in November and found Herb is full of tales and stories as usual. . . . **Doug** and **Elizabeth Baker** will be looking for us up there next summer. On December 13, **Earle** and **Beulah Brown's** son, **David Moody Brown**, was married to **Patricia Mae DeWitt** in the Oakland, Calif., First Congregational Church. **David** and **Patricia** both attended University of California. **Earle** and **Beulah's** card showed a picture of Santa driving one of those fabled old San Francisco cable cars, filled with Christmas shoppers. He said: "You are probably enjoying the mica white snow while we are like bees buzzing around the flowers and trees." Ah, me! **Frank** and **Gladys Boynton**: "Thanks to the best class secretary of all time," and thanks to you, **Frank** and **Gladys**; it was so pleasant to see you last April.

Whit Brown, signing up for the New York Class dinner in January: "I couldn't miss the train ride over to New York with boys." Good old **Whit**. . . . That **Henry** and **Frances Daley**: "When you said a 70-year-old man was only running for the exercise, you forgot the saying: 'There are a lot of good tunes played on an old fiddle; say it ain't so, Azel.'" What do you suppose they mean? . . . **Otto** and **Helen Hilbert** left in January for Australia and New Zealand via Hawaii, Hong Kong and Singapore, then on to South America returning to Corning in April; what globe trotters! **Otto** visited with **Charlie Williams** in December. . . . The irrepressible **Hiltons** are planning on

our 50th. Meantime, they are keeping their hospitable bar in Belleair Estates, Clearwater, open for any visiting classmates. They see a lot of **John** and **Lee Homan** at nearby Indian Rocks. . . . Poor **Ken** and **Ester Johnson** are still having more than their share of illness and hospitalizations. Good health and good cheer to them. . . . **Boots** and **Helen Malone**, leaving their pretty summer place at Sugar Bush Farm, Chester, Vt., have to remind us they will be wintering on the shore near Sarasota. . . . **Ben Lapp** is planning for our 50th, meantime he and **Soph** are enjoying traveling and visiting their married son and daughter and four grandsons. Don't forget the Annual Class Cocktail Party at the M.I.T. Faculty Club on the afternoon of Alumni Day, June 15, 1964.

In preparation for their summer European trip **Vince** and **Marion Maconi** are wintering and golfing in Florida—ah, me! . . . To desecrate the beautiful picture of a gold, white and holly red candle, **Ben Neal** wrote: "Don't burn both ends of the candle." . . . **Ray** and **Margaret Stringfield**: "We surely enjoyed seeing **Fran** and you out here last April. **Bob Welles** and I have just been re-elected to the board of our local M.I.T. Club. For our annual dinner on January 21, I have secured **Bryant Essick, II**, '22 as speaker. He is president of **Essick Manufacturing Company** here and has been on all kinds of civic and government commissions. Come out again." And wouldn't we like to accept the offer after the splendid reception our California classmates and their lovely wives gave us. . . . **Bur** and **Joan Swain** caution us to watch our waistlines with that Swedish cuisine on the "Gripsholm." . . . Now here's that **Jim Tobey** suffering again with **Lena** in West Palm with an average daily temperate of 70 degrees and constant sunshine. **Jim** asked us to throw a snowball for him. Maybe right at him! . . . **Carl** and **Charlotte Wood** wrote about our pleasant visit with them last August. . . . **Max** and **Catherine Woythaler's** card was a big gold printed "joy" with the "O" a big pretty wreath of holly, fruits and flowers—unusual and attractive. We also received cards from **May Sheils** and her children; **Cynthia Blodgett**; **Barbara Thomas** and daughter **Virginia Johnston**; **Ruth Hayward** and **Alice Chellman**. It's always good to hear from the widows and families of our former classmates.

Louie and **Paulie** wished us "happiness, health, good cheer and peace." I am sure we could not ask for any more. "After nine years of retirement I am back to new life, with a new wife, managing an apartment building and loving it all in this new, young and beautiful country (Tucson, Ariz.). **Wayne Bradley** was a recent visitor here." . . . In Boston recently on a hurried visit, good old **Ben Neal** phoned from the airport for a pleasant talk. We are always glad to hear from any of you when you are in or near Boston. . . . From our 'reading public,' **Harry** ('14) and **Ann Wylde** invited us to see them in Southboro, Mass. **Dix** ('17) and **Vi Proctor** will see us sail away before they leave for San Francisco and the South Pacific. You will be reading this column around

March 1 as we are finishing our cruise going up through the Caribbean. Plan on our 50th and remember the Alumni Day Class Cocktail Party.—**Azel W. Mack**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.

'16

Our opening message comes from our irrepressible, ever-skiin' president, **Ralph Fletcher**: "It's been a great winter. The skiing here and abroad has been more than adequate, both pleasant and challenging. Business activities continue to take too much of my time, but here again some of it brings pleasure and much of it brings challenge. I'm looking forward to the weekend of June 12, 13 and 14, 1964, when once again many of us will join together to celebrate another reunion, this time our 48th. We'll be at the Chatham Bars Inn in Chatham, Mass. on Cape Cod. If you haven't been able to make one of these reunions in recent years, let's hope that this will be your year. Believe me when I say that it is a wonderful experience. Those who come one year come back again so long as dates fit conveniently into their schedule. We don't push anyone to attend. We simply mention the dates and the place as a reminder now, and later contact by letter every member of the class to see who is coming. Start making your plans now to attend the 48th."

Around Christmas time, many messages of good will and best wishes to the whole Class of '16 were received. **Russ Lowe**, from an intriguing address, 110 Yacht View Lane, in Fort Pierce, Fla., says they find the mimeo-ed **Irv McDaniel** and **Sylvia Young** letters most interesting and are prompt in forwarding them. (Should any '16er have a nagging conscience about not forwarding one of these items, well—he knows what to do!) . . . **Joe Farhi**, in Brooklyn, regularly sends his year-end greetings. How are we going to get Joe to come to one of our New York luncheons or reunions unless more of us press him (49 Clarkson Avenue)? . . . **Brad Curtis** reports good progress from his coronary back in was-it-September, but has not yet resumed teaching at Newark College of Engineering where he started teaching after retirement in 1956. He says **Jim Evans** was down that-a-way before Christmas to see the results of a fire on the boardwalk in Asbury Park. . . . **Arvin Page** reports that his arthritis is abating, and if it keeps on its present course: "I may yet be able to play golf with you and the other boys in 1966. Why don't you take a trip to Florida to see all the '16ers now living there, stopping here on the way down or on the way back? I am anxious to meet the woman who has been able to live peaceably with you for 40-odd years." (Hmm, 41.47 years, Arvin, and not odd! As the Number 1 professional engineer in North Carolina, don't tell me you have started to lose your sense of precision, as taught by Goodwin way back when!) . . . **Hal Neilson** reported the phenomenon of phenomena: deep, deep snow in Lexington,

Miss., "a real New England Christmas season—ice, snow, cold—really awful and too much of it! I prefer warm weather and clear roads so we can circulate. . . . Again, the do-it-yourself Christmas cards to be shown at the current reunion are those by Ed Hanford, Bill Drumme, Irv McDaniel, and your secretary. Bill notes that this year's work of art (and it is real art, we can say!) is his 39th Madonna. Irv and Kay have gone all out with a handpainted "Our Tree of Memories," 28 scenes and views, representing 29 points of visit, each delicately painted in multi-color. One card alone must have been terrifically time-consuming. We believe they started working on this year's cards way back in the spring or summer and continued along their sea voyage from Italy through the Panama Canal to Los Angeles. We should like to have samples of additional '16er do-it-yourself Christmas cards to post on the reunion bulletin board this June.

We are sorry to report that one of our charming reunion wives, Eleanor (Nell) Webster, had a light coronary late in November, so that for three weeks Don had to give up "settin' a spell" and keep bachelor's quarters. Progress has been good. Flowers from a group of '16ers were much appreciated, and we understand Florida was in their plans for January. . . . In December, **Howard Hands**, writing from Clearwater Fla., says Christmas doesn't seem like Christmas down there. Decorations and parades but no snow, no bite in the air, few exchanges of gifts. Imported Christmas trees don't keep any length of time, so artificial trees become the order of the day. But, he adds, there are many plusses: "the grass is green, the temperature is moderate, the flowers are in abundance, particularly poinsettias at this time." Last summer they had an extended trip of some 6,000-plus miles, hitting 13 states and Canada, some of them twice. They started off at son Richard's in Cleveland, then to Michigan, Canada, New York, Pennsylvania, and all the New England states except Vermont. They hope to visit the World's Fair in New York this summer. . . . **Ralph Fletcher** advises going to the World's Fair either the second or the third week of June, just before or just after June 12, 13, 14—the 48th Reunion dates! Nice weather then—reasonable guarantees!

Bob Burnap, in November, reported that the highlight of the preceding three or four months was the departure of their daughter and family for a year's stay in Copenhagen, where their son-in-law is working on a special assignment with the Coast Guard. So Mom and Pop are planning a visit to Copenhagen, come spring, and hope to do some further sightseeing in other countries of the continent. In an earlier trip, way back in 1952, they did some traveling in England, Scotland, France, Belgium, and Holland, so now they look for something new. Any suggestions (and mind, he hasn't asked for any), may be sent to him at 58 University Court, East Orange, N.J. . . . We have another picture to hang in our Reunion Gallery next June. That of **Bill Barrett**, with the announcement that,

back in September, he had been appointed president of the American Craftsman's Council. His name looks good on the new stationery, and he is easy to reach, for any upper Fifth Avenue shoppers—29 West 53rd Street, in New York.

From Bogalusa, La., we have warm greetings from our safari correspondents, **Sylvia** and **Vertrees Young**, and just what we thought would happen is happening; many besides '16ers are showering her with praise for her wonderful safari letters. Vert says: "It is amazing the number of people who read them in the Bogalusa papers, and she can hardly go down town shopping without having someone stop her and tell her how much they have enjoyed the letters." In one of her letters, Sylvia told of staying in the Danielli Palace Hotel in Venice, a place which over a century ago had been transformed into a deluxe hotel—a sumptuous palace, formerly the residence of princes, and intended thereafter to become a "hotel for kings." Sylvia writes: "So this hotel offers its guests a unique comfort in a taste of furniture, service, first class clients (of course including our friend Charlie and his harem and 'Us'—six grateful Americans). The cordiality of the management was just as warm to us as it was to the 'King of Afghanistan and his Royal Family' who arrived the next day, except they literally had 'The Red Carpet' laid from the gondola entrance to the lobby, with men carrying arms full of long-stemmed red roses to present to the Queen! There are no kings or sons of kings, princes of blood or politics, of finance, who have not stayed at the Royal Danielli, but believe me, no six people were more thrilled, more joyful, or nearly as full of excitement and appreciation as we six were!" Sylvia, writing about their group-of-six luncheon the next day at "a place recommended to us by a handsome Canadian gentleman who had a table near us at dinner the night before" says: "At luncheon, an artist wandered in and while he was making a caricature of Vertrees, with his newly acquired 'beard,' Vertrees made one of him. We all agreed Vertrees' was superior. Little Mary even suggested that our financial problem could be settled if V. Y. would set up his easel in front of Landry's!" So you see, our Vertrees has other potentials quite in addition to his skills in game and rock hunting. We're deferring until later the December story about DMSO (Dimethyl Sulfoxide), an industrial solvent manufactured at Vertrees' Crown-Zellerbach plant in Bogalusa—newly discovered to have amazing possibilities as a medicine.

Frank Ross was what-he-called "carted off the golf course" in Naples, Fla., early in November with his second heart attack. On December 3 he wrote: "But the Doc says I'm doing o.k. and probably can go home the latter part of this week; sure hope so." Two weeks later his comments on Irv McDaniel's August letter on Budapest and Prague read: "I'm going to Budapest and Moulin Rouge, to heck with those other places. Best regards to all." . . . On this same letter, **Herb Mendelson** had commented a few weeks earlier: "Yes, for security(?) from cradle to grave, we have torpedoed the stamina and char-

acter of our own once-great nation, beloved and admired throughout the world. Are we ever to have a renaissance of intellectual integrity?" (One answer: Vote for You-Know-Who!)

We have a wonderful account of **Hovey Freeman's** career, plus his picture; all from the Providence Sunday Journal of November 17. The occasion was Hovey's elevation to chairman of the board of Manufacturers Mutual Fire Insurance Company of Providence, after serving as its president for 31 years. Since he became president at age 38, succeeding his father after his father's death in 1932, the company's insurance in force has climbed from \$2.5 billion to \$22.0 billion—how about that? Do read the interesting story (which we will have at the reunion), not only about his success in insurance but about his community activities. The list includes trustee and president of a hospital, president of Rhode Island Public Expenditures Council, initiator of the Providence River hurricane dam, director of eight different companies including a bank. We especially like the end of the story which goes like this: "What Mr. Freeman regards as his favorite pastime is fixing and building things either in his workshops—he has one at his Providence home and another at Bristol—or on some do-it-yourself project around the house. Currently, he said, he is kept busy repairing toys for his grandchildren and fixing boats. But he likes nothing better than to don his old clothes and get to work at some project around the house. 'I'm a good engineer, a good electrician, and a good carpenter,' he said, 'but I'm a lousy plasterer.' His most recent accomplishment as a do-it-yourselfer is his den which he paneled in mahogany." Why do we like best this last part of the story, you ask? Because I too am a lousy plasterer!

Bob Wilson just couldn't stay put after his slight coronary late in October and really "jumped the gun" as some had predicted he would, by running up to New York and even attending the December New York luncheon at the Chemists' Club. And we are glad to report that Pearl got back to driving a car again early in December; the first time in 15 months since her accident in Italy. Daughter Lois, who attended our 42nd Reunion in 1958, visited them from West Texas in December. . . . **Bill Leach**, before heading for California and their trip to Japan and Hong Kong, leaving on the 'President Wilson' on January 17, said he planned to contact the Irv McDaniels during their stop in Los Angeles. Looking back to his convalescence in Johnstown, N.Y., Bill writes: "Ray Brown called to see me several times at the farm and at the hospital. He is a swell guy!" And by the way, we have just had word (January 10) that the McDaniels are now taking up permanent residence 40 miles south of Los Angeles—their new address is Westcliff Villa #23, Westcliff and Buckingham, Newport Beach, Calif. . . . **Shatswell Ober** reports that at the fall luncheon of the M.I.T. Professors Emeriti, **Steve Simpson** (Course V) was the only other '16er present. He notes: "Like me,

he is still 'lecturing' to students. Others present whom some of us may remember as our professors were Doc Lewis, '05, of Chemical Engineering, Professors Riley '98 of Mechanical Engineering and Phillips of Mathematics." (Well do [editorial] we remember Professor Phillips!)

Phil Baker says that, on a per week basis, he still goes to the office two or three times, bowls twice, takes dancing lessons once, Symphony once, but he can't "keep as young-looking as our inimitable **Cy Guething** here." He speaks of a "remarkable senior men's group in Grosse Point" that started modestly four or five years ago—retired former men of action, money, responsibility, lawyers, bankers, presidents, managers, engineers, doctors, et al, all 65 or over. They meet twice a month; some play cards, bowl, golf, woodwork have their own groups. Says: "Fine talks, go-see trips, etc., make for great interest. Starting with six or eight, they now have 350 fine gentlemen. Other areas might find such a group very pleasant, with dues \$5 and lunches \$1.50—\$2. Sounds good, Phil! Phil and Thelma took a Caribbean trip in February. . . . **Dick Berger** continues active as indicated by an item in the November 20 issue of the Bridgeport, Conn., Post: "Richard G. Berger, President of Cancer Prevention, Inc., will speak at the Temple Lodge Fellowshipcraft association meeting tomorrow at 8 P.M. Mr. Berger graduated from M.I.T. in 1916 as a research chemist and in 1930, started researching for cancer control through prevention as a spare time hobby."

And here's part of an interesting letter from **Irv McDaniel** as he and Kay were "At sea off Aruba en route to Panama." Sorry, we can give only excerpts! So, to start: "The most cheerful part of this letter is about our trip home. I think it is the nicest sea voyage we have ever taken. These ships were originally passenger ships and then were converted into freighters. As a result they have many refinements and features not found on freighters. And then with perfect food and ideal service, the Italian Line is outstanding. Our time in Genoa was a madhouse. The Genoese have a saying: 'Give me five years less, but let me talk'. How true! . . . Had an entire day at Marseilles and also at Barcelona. In Barcelona be sure to visit 'El Cantabrico' for the finest lobster and shrimp you ever ate. It is behind the fish market; it looks like a dump, it smells like a dump, it is a dump, but what food! . . . Two days later we sailed into Funchal, Madeira. It is noted for its embroidery, reed baskets, and wine. The island is volcanic, very green and fertile and supports a large population. The people are self-supporting, happy, and loyal to Portugal (United Nations please note). There are no airfields yet and the only access is by boat. It is a beautiful island and our brief visit was way too short; we want to go back some day and spend a month. From there on we sunbathed every day and Katherine has become so black she will have to be integrated. . . . I hate to think that this is my last letter. I have really enjoyed writing them; no one to interrupt, and I could write anything unchallenged. I

have tried to give you all phases of European life—the good with the bad. Any libidinous paragraphs or 'erotica' have been solely for the purpose of giving you an adult picture." Further on, Irv gives a few opinions about this world of ours, as for example: "England has recovered less than any other country in Europe since the war. They are sadly in need of many things, especially new housing. I feel that it is imperative that the U.S.A. and all English-speaking countries stick together as a unit and that any financial aid should be given first to them. India today gets more than ten times the amount allocated for Britain. After that, if conditions warrant, I would concentrate on the Spanish speaking nations. If there is any money left we might reduce taxes and our national debt." There are more opinions; read them at the reunion. Finally: "And now I have come to the end. I hope I have not bored you greatly during the past five years. I hope I have added a little bit to your background and maybe given you a few new horizons." And he surely has; the class is greatly indebted to Irv and Kay for so many interesting and penetrating insights to places all over this big old world of ours, as seen on their extensive travels. Our many thanks, Irv; now you both are home, perhaps you will find things here too that will inspire you to go on writing. Again, many thanks!

Ralph Fletcher reports that **Tom McSweeney** and his wife paid him a short visit late in November, and if Ralph and his good secretary, our Bob O'Brien, are allowed to make a prediction, we will see them at the reunion on the Cape in June (remember? Chatham Bars Inn June 12, 13, and 14!) . . . We have often hoped for a story or two from **Cy Guething** about fishing down in the waters of the Bahamas. Tall stories, short stories—whatever he can collect when he and Gypsy go off each winter, as they did this year on January 4, for two months on Harbour Island. Just before they left, he favored us with two good ones, and we are glad to present one of them now. Cy speaking: "Dear Harold: The following story is absolutely true or I hope to you-know-what! Bone fishing is as sporty as any in the world, and there is none better than at Grand Bahama or in that general vicinity. A catch of four to six a day is tops. Little Cy was surf casting inside a horseshoe-shaped coral reef at Pink Sands Beach on Harbour Island when lo and behold! The fish really started biting! That horseshoe area was apparently full of bonefish for in one hour and a half I had hooked 15 and brought in 9. I started with a 60-70 yard line and ended with only a 30; those fish broke it so many times on the coral while it was in tension. That was a record for Harbour Island. I have many witnesses!" Nice going, Cy!

Allen Pettee writes that he and Helen made the g. c. rounds (g.c. means grandchildren) last summer and topped it off with a wonderful visit with **Gene and Peg Barney** in Birmingham, Mich.: "where they have a beautiful home in a gorgeous area practically overrun with General Motors executives. Thank goodness there is a period of a few years between retire-

ment and the wheel chair when one can polish up eroded friendships and find a handy cane and lazy tongs in most any classmate's coat closet." Allen says one brags about g.c. but that "they say great-grandchildren hardly stir the adrenalin. I'll let you know about that later." Down in Tryon, N. C., Allen dabbles with politics. He says he is astounded at the casual way in which thousands of political opinions "are lumped together and distilled into active form—the casual way, you understand. It ought to be done more efficiently and less messily." . . . The **Jap Carrs** have made their customary winter move from Buck Hill Falls, Pa., to Palm Beach where Jap says a warm welcome awaits any '16er who will but press the front doorbell button at 260 Pendleton Avenue. . . . And our most recent greeting from the **Joel Connollys** came from St. Petersburg, Fla., even though their permanent address for mail continues to be 239 Ferson Ave., Iowa City, Iowa. . . . **Allen Giles** continues as chief engineer, 29 years now, of Longwood Towers in Brookline; 300 apartments, 1,000 rooms, the only residence apartment hotel of its kind in New England. Son Allen is still assistant director of the Music Department of the University of Buffalo, and daughter Dorothy (a classmate of your secretary's daughter at Wellesley, '49) is carrying her education further. Allen notes: "As a final bit of philosophy, education is a great thing, and if anyone is not interested in attending a good institution like M.I.T., then Lesley-Ellis, Harvard, and Radcliffe make the next best choice."

We're not bragging this time; at the January New York luncheon, **Peb Stone** was the only '16er present as compared with four '17ers—weather was very bad, we say! However, those in the New York area will be much interested to know that a new arrangement has been made for these monthly luncheons at the Chemists' Club on East 41st Street. Instead of a private room with extra room charges, the luncheons will be held at a special table in the back room of the second floor, with luncheons as low as \$1.50! Remember, New York 1916 luncheons are held each month, on the Thursday following the first Monday, 12:00 noon, Chemists' Club, 52 East 41st Street. . . . Messages at hand from Dina Coleman, George Petit, Emory Kemp, Eric Schabacker, and Ed Weissbach will be included in next month's story. So just keep the pertinent data coming in and we will be proud to process it all. Save those reunion dates, June 12, 13, 14, Chatham Bars Inn, Chatham, on the Cape. Write a little but write often.—**Harold F. Dodge**, Secretary, 96 Briarcliff Road, Mountain Lakes, N. J.; **Ralph A. Fletcher**, President, P.O. Box 71, West Chelmsford, Mass.

'17

The first travel letter this month comes from **Heine Gartner**. It's still not too late to send yours. Heine writes: "About the middle of October, 1963, my wife and

I felt we needed a change and rest from our hectic duties of the past year. (Heine and wife restore and make antique furniture under the name "barncrafters" at their home at South Wellfleet, Mass.) Not only has our shop and salesroom kept us busy—we had the best year since we retired about 10 years ago—but also took a major part of our time and energy. We were, therefore, in a mood for a change. Our first thought was to go to Pakistan to visit our youngest daughter and her family of three sons. They have been there for 18 months, and are in love with the country. Our son-in-law, a professor at the Maxwell School of Political Science, Syracuse University, is head of the Staff College in Lahore trying to teach the Pakistani top brass the principles of democratic public administration. We gave up the thought of traveling such a distance for minor health reasons. Instead, we headed west in the U.S.A. Our first stop was Chesterland, Ohio, to visit our middle daughter and four children. Then we headed west again. Finally we arrived in Las Vegas, N. M., to visit our oldest daughter with four children. Her husband is a professor of sociology at the New Mexico Highlands University at Las Vegas. We had a wonderful visit, with side trips to visit old Indian ruins and modern Pueblo reservations. We then moved on to Tucson, Ariz., to visit my brother-in-law, Louis Zepfner, M.I.T. '15. We made more side trips in the 85 degree weather which prevailed all the time we were there. (Tucson Chamber of Commerce take notice.) Following this, we were ready for a leisurely trip back to Cape Cod, arriving the first of December to run into a terrific Southwester storm which ruined many beaches and summer cottages. This was the first bad weather we had during our entire trip. Now we are back at work trying to get out all the restoration jobs left with us over the winter. I wish you all could see our little Cape Cod house right now, all decorated with lights in the windows, and hundreds of lights outside: on the wall in front of the house, spotlights on our 100-foot tall spruce tree, and lights on our small spruce trees on the lawns. We received a citation for the best decorated home last Xmas. Mrs. G. joins me in greetings to all our friends."

Here is a letter from a long-time-no-hear-from member of the class, **Leon Keach**, Melrose, Mass.: "Not having contributed to the class notes since before Nero was a pup, I must have a very small public, and almost no attendant bated breaths; indeed, these words would have a sepulchral tone if anyone remembered the demise. After M.I.T., there were two memorable years in Europe, one on the Traveling Fellowship in Architecture, before I faced the inconsiderable pecuniary facts of professional life here in Boston. With the White Mountains only a few hours distant there seemed no reason for leaving the area, where one could combine exercise and architecture. A group of Course IV men joined me in proving the excellence of the combination, notably Kenneth Reid, '18, and in founding the League for Leaner Loins whose motto contends that 'There is no exercise without sweat.' A small hiking-climbing

group still maintaining its vigor by the inclusion of sons and grandsons, it has a fixed policy, dating from 1922, of holding all planning sessions over a mess of tripe at Locke-Ober's. Meanwhile, the mutations in our chosen profession have caused us ancients, bred to an earlier variety of infallible gospel, to regard the new messiahs with 'tolerant cynicism.' We were rather sure of ourselves, too, until the bottom dropped out of our bucket of dogmas, back a piece. Most of my classmates seem to be firmly retired, but I'm still hard at it and will continue to be as long as my head of steam obtains. So far the kettle's perking real well, and I may persist until I've as much cash on hand as when I graduated in '17. Guess I'd better rap on wood."

The daughter of **William F. Johnson** reports his death on October 8, 1963, at Rochelle Park, N.J. He was with the class from 1913 to 1916 in Course I. He was a first lieutenant of infantry, U.S. Army and on duty with the second Philippine infantry in the Philippine Islands in October, 1919. . . . Some of you may be interested to know that Conchita Zambrano de Lobdell's new address is San Carlos 86, Mexico, 20, D.F. . . . **Vincent Panettiere** of Sarasota Fla., advises that he has been active in the formation of the M.I.T. Club of Southwest Florida. They had their first meeting on December 9. . . . The penalty that you all pay for failing to deluge the secretary with class notes, is to give him freedom to fill in with whatever comes to hand. Several years ago the New York Times Magazine ran a group of quotations under the title "The Golden Years." Considering the age group that 1917 is in, the following may be apropos: "The first proof of old age is when you think that other people aren't having the fun you had."—Christopher Morley. "To me, old age is always 15 years older than I am."—Bernard M. Baruch. "My diseases are an asthma and a dropsy and, what is less curable, 75."—Samuel Johnson. "Growing old is no more than a habit which a busy man has no time to form."—Andre Maurois. "When men grow virtuous in their old age, they only make a sacrifice to God of the devil's leavings."—Jonathan Swift. "To be 70 years young is sometimes more cheerful and hopeful than to be 40 years old."—Oliver Wendell Holmes. "When a man falls into anecdotalage, it is a sign for him to retire."—Benjamin Disraeli. "Three score years and ten is enough; if a man can't suffer all the misery he wants in that time, he must be numb."—Josh Billings. "What's a man's age? He must hurry more, that's all; cram in a day what his youth took a year to hold."—Robert Browning.—**W. I. McNeill**, Secretary, 107 Wood Pond Road, West Hartford, Conn.; **C. D. Proctor**, Assistant Secretary, P.O. Box 336, Lincoln Park, N.J.

'19

Put on your calendar right away the dates of our 45th Reunion in June. I have been informed by **Will Langille** and

Don Way that we will gather at Chatham Bars Inn, in Chatham, Mass., on June 12, 13, 14, the weekend before Alumni day, which is June 15. . . . We have a change of address for **Alfred W. Hough**, from Glen Falls, N.Y., to 91 Deer Meadow Lane, Chatham, Mass.—**Eugene R. Smoley**, Secretary, 30 School Lane, Scarsdale, N.Y.

'20

Heartwarming holiday greetings to the class were received from Norrie Abbott, Homer Howes, Ned van Deusen, Bill Freeman, Chuck Reed, K. B. White, Dave Fiske, Ned Murchough, Bud Cofren, Mary Akers, (Ken's widow) and Dorothy Murphy (Bunt's widow). Homer wrote that he was appointed to another year's term on the M.I.T. Library Visiting Committee so may get up this way during the year. We will be happy to see him and Vera. They took an extended Mediterranean cruise last year, between Homer's trustee meetings at Fisk University. Homer says: "I strongly favor inviting wives to our 45th Reunion." Anyone second the motion? . . . **Bill Freeman's** unique Christmas card reported on some of his and Ginny's doings at Runnymede Plantation, Poplarville, Miss. They visited their son and his family in Florida, went on a cruise to Jamaica and Haiti, the Dominican Republic, Virgin Islands, Barbados, Trinidad; had a successful tung oil nut crop and seem to be enjoying life to the full. . . . **Dave Fiske** has also been traveling, to Norway and England last summer. Dave is comfortably settled in Dover, Mass., grows about 30 different kinds of flowers, "including dandelions," feeds as many as 20 kinds of birds ("including 250 starlings"), chipmunks, etc., collects historical books, enjoys, Handel, dacton, Volkswagens, bowling, Bea Lillie and oyster stew; he does not enjoy Massachusetts automobile drivers. . . . **K. B. and Denise White's** highly original card from Paris was enjoyed and appreciated as always. . . . **Bud Cofren** gave us the sad news of Eugenia's death last August. We had a pleasant visit with her at the Alumni luncheon last June, and she was in good health and spirits at that time. Bud is at their winter home, Winter Haven, Fla., and will shuttle back and forth between there and Warner, N.H., their summer place.

Johnny Rockefeller's book "The Poor Rockefellers" continues to attract favorable notice. It received the honor of being included in the collection of works selected by the American Booksellers Association to be given to the chiefs of state of 100 countries, and its author was awarded the New Jersey Author Awards Citation in the biography classification by the New Jersey Association of Teachers of English.

With sorrow and regret, I report the death of **Art Atwater** last June. He is survived by his widow. His home was in Houston, Texas. A popular and beloved classmate, he will be sorely missed. . . . Another heavy loss to our class is in the death of **Henry Erickson**, last Novem-

ber, at his home in East Dennis, Mass. Until his retirement two years ago, he had traveled throughout the world as a research engineer for Allis-Chalmers Company.—**Harold Bugbee**, Secretary, 21 Everell Road, Winchester, Mass.

'21

The recent Class of '21 letter, regarding our 45th reunion in 1966 and a possible interim reunion prior to that date, has brought many interesting replies to our President, **Ray St. Laurent**, and to **Ed Dubé**, who has volunteered so much of his valuable time to chair the interim reunion activities. We hope your reply is among those already counted. If not, get it on the way now, so that the committee will have the benefit of the broadest base for determining a course of action. To supplement the list of suggested forms that another 1921 interim reunion might take, as outlined in the letter, **Father Everett R. Harman**, pastor of the Church of Christ the King in Cedar City, Utah, has come up with a suggestion that has received favorable comments from Ed Dubé's committee. Father Everett has pointed out that there are four beautiful National Parks in and around Cedar City. He has most graciously offered to plan and guide a trip for us all through the gorgeous scenery of Grand Canyon, Bryce, Zion and Cedar Breaks, which total some 800,000 acres and include a mile-deep gorge, areas of brilliantly colored grotesque eroded rocks, a multi-colored gorge and other spectacular scenic exhibits. Drop a note right now to Edouard N. Dubé, 120 Tremont Street, Boston 8, Mass., if you are in favor of such a trip, and indicate preferred dates. . . . Another of our four ministers, the Reverend **Williston Wirt**, writes that he completed a 30,000-mile journey between April and October of 1963 and would prefer to have an interim reunion during 1965. Will gives his new home address as 534 West 6th Street, Claremont, Calif. . . . **Richard Lee** of 4748 Twenty-fifth Street, San Francisco 14, Calif., says he is interested but, since he has not yet retired, available time is a problem.

Roy A. Wehe, consulting engineer of 660 Market Street, San Francisco, wrote an interesting letter to Ray, saying he is as active as ever with a heavy schedule of commitments, some for the State of Hawaii. He and Mrs. Wehe infrequently come East, but are planning a motor vacation to New England, perhaps for the 45th Reunion. They will make a second trip to Europe during 1965. . . . Brigadier General **Boyd W. Bartlett** has retired from his professorship at West Point and is making his home in Castine, Maine. He is a trustee of Bowdoin College. . . . **Edward R. Chilcott**, who heads the J. L. Davidson Company, 6670 Lexington Avenue, Los Angeles 38, Calif., says he will have to sit this one out. Hope you still plan to come East and join the Hexalphas for our 45th, Ed. . . . **Mel Jenney**, our 1966 Reunion Chairman, says the Mountain View

House in Whitefield, N. H., is an ideal spot and the subsequent trip to Cambridge for our 1921 get-together at Alumni Day will add to the enjoyment of a vacation in New England. . . . **Joseph C. Morrell**, 90 Bryant Avenue, Dorset 5B, White Plains, N. Y., likes the idea of an interim gathering at Sturbridge, Mass., questioning the merits of a cruise "for an old widower allergic to vivacious virgins, gay divorcees and charming widows!"

Our Class Vice-president **Irving D. Jakobson** writes: "Ruth joins me in wishing happy holidays to you and Maxine. Hope you are now fully recovered from the auto accident. It was quite a shock to hear you had been so badly damaged, and we are glad you are making such an excellent recovery. I thought you might be interested in the enclosed issue of the 'Maritime Reporter' for December 15, 1963, the cover picture of which shows our classmate, **Liz Gatewood**, being awarded the David W. Taylor Medal of the Society of Naval Architects and Marine Engineers at their annual meeting last fall. I was present at the affair and had the pleasure of congratulating Liz at the time of the award and extending to him the best wishes of the Class of 1921." Excerpts from the publication include: "Arthur R. Gatewood, President of the American Bureau of Shipping, was presented with the David W. Taylor Medal by Rear Admiral Ralph K. James, President of the society. This gold medal for 'notable achievement in marine engineering' is the society's highest award." It recognized numerous contributions which Liz has made to the marine profession during the 30 years he has been active in the S.N.A.M.E., including advancement in the methods for surveying and classifying ships. . . . Another recipient of national honors is **John J. Healy, Jr.**, corporate planner for Monsanto Chemical Company of St. Louis, Mo. Jack was honored at the annual meeting of the American Institute of Chemical Engineers in Houston, Texas, last December with the society's "Founders Award" in recognition of his "distinguished service to the chemical engineering profession." You can add your congratulations to ours by writing them to Liz at the American Bureau of Shipping, 45 Broad Street, New York 4, N. Y., and to Jack at his home at 7640 Maryland Avenue, Clayton 5, Mo.

In the last 30 years, various members of the Class of '21 have been so active in the formation and administration of the M.I.T. Club of Northern New Jersey, that it is most gratifying to have the Institute select this club for a trial of a new plan to run a one-day conference (on Saturday, April 18, 1964), with the dual objectives of helping M.I.T. alumni grow intellectually and presenting an accurate impression of M.I.T., and the educational opportunities it offers, to local high school guidance counselors. **Joe Wenick**, the perennial treasurer of the club, is the general chairman of the special conference committee, which also includes former club presidents **Sumner Hayward** and **Cac Clarke**. . . . **Romney J. Mellen** is the author of an article entitled "How

Silver-Gold Ores Respond to Salt Roasting, Cyanidation," which appeared in "Engineering and Mining Journal." Now retired and doing consulting work in El Paso, Texas, Romney had 38 years of service with American Smelting and Refining Company. He had been chief metallurgist in the company's mining department in Mexico and was later named chief metallurgist for the entire mining department.

It is now almost impossible for this chronicler to keep up with the latest trips of that dashing world traveler, **Saul M. Silverstein**, President of Rogers Corporation, Rogers, Conn., despite the sheaf of excellent and most welcome diary reports which he courteously sends to us, supplemented by post cards with unusual foreign stamps. Saul used to limit his overseas travel to one trip a year or so, but the 1963 record shows one 28-day trip through England and five countries on the Continent during July. This was documented with seven reports, totaling 39 pages of single-line spaced typed material. Heralded by greetings airmailed from Brussels, he took a 35-day journey to Germany, Austria, Italy, Belgium, Holland, France and England, starting in mid-October, spinning off some 40 more pages on every conceivable detail. He is tops as a reporter, and some day we are going to find out how he manages to get time for eating, sleeping and the business activities which form the basis for his travels!

The holiday season always brings to Maxine and your secretary so many welcome greetings from M.I.T. friends, which we proudly display around the tree for all to see. They gladden our hearts and quicken our pace and bind ever closer the ties we started years ago. Our special thanks go to Jack and Elizabeth Barriger, Ednah Blanchard, Buck and Mary Buckner, Ethel Burckett, Rich and Mary Louise Clark, Phil and Edna Coffin, Sarita and Gonzalo Docal, '44, Ed and Maida Dubé, Janet and Gef Farmer, '22, Ed and Helen Farrand, Harry and Catharine Field, Robert and Doris Haske, Munnie and Alex Hawes, Sumner and Betty Hayward, Dug and Betty Jackson, Irv and Ruth Jakobson, Jack and Marge Kendall, Chick and Laurie Kurth, Moose LeFevre, Al and Emma Lloyd, Conchita Lobdell, Milicent and Joe Maxfield, '10, Bob and Helen Miller, Phil Nelles, George and Muriel Owens, Leo and Vivian Pelkus, Helier and Graciela Rodríguez, Ray and Helen St. Laurent, Don Severance, '38, Rufe and Madeline Shaw, Helen and Lem Tremaine, '23, Louise and Carlton Tucker, '18, Joe and Dorothy Wenick, and Dave and India Woodbury.

Ed Dubé reported his interim reunion activities and sent us a beautiful Vermont gift. . . . Ray St. Laurent reported on the state of the class and sent us a complete set of 1963 Canadian commemorative stamps. . . . **Jack Barriger** reports his annual pilgrimage to industrial traffic managers along the entire West Coast. He also attended the Pan-American Railway Congress in Mexico City, where he was chairman of the committee that submitted some 60 reports of the U.S.A. delegation. . . . **Rich Clark** wrote: "Sorry

to read about your accident. We are glad you are up and around again. Missed the long 1921 notes you have been turning out for lo, these many years!" The Clarks have a larger boat for cruising on Galveston Bay. Rich is still active in the Eighth Coast Guard District Auxiliary as chairman of National Safe Boating Week and as one of the District Staff Officers. Son Sandy lives in nearby Houston and the grandsons are now aged eight and five. Rich and Mary Louise find their retirement to be a busy and enjoyable experience. . . . **Ed Farrand's** card had a striking picture of his Penacook, N.H., home country and a note: "I do greatly trust your injuries are now decently buried in the past. According to your recommendation, I have just ordered seat belts with a new car and will use 'em!" . . . **Dug Jackson** wrote: "We were sorry to hear of your accident and rejoiced to learn of your recovery." Dug has retired from the Ballistic Laboratories at Aberdeen Proving Ground and he and Betty spent the holidays with their married daughter and her family in Florida.

Helier Rodríguez said: "At this time that we think of all our friends, I miss most those dear ones of my school days that I cannot often see." Graciela adds: "We hope that in the future we may pay you a visit but meanwhile we would be very happy if you came to visit us in Madrid." . . . **Bob Miller** has turned out the most extraordinary photographic record of his family in the long series of beautiful holiday pictures. He and Helen, their son and five pretty daughters, son-in-law and three lovely grandchildren are shown standing in front of a complete view of the Capitol. Bob added: "You had us concerned about your auto accident and we hope you are over your troubles now." . . . **Ednah Blanchard** reported a visit from **Jimmie Janes** of Commonwealth Edison of Chicago. . . . **Harry Field** asked: "What's this about an irresistible force meeting an immovable object? We hope that by the next issue of The Review, you will be entirely out of the woods. Aloha." . . . **Rufe Shaw** takes the cake for the most concise report of 1963: "Our Mary and Major Bob are in Wiesbaden, Germany, and we are hopping off on December 20 to spend Christmas with them. Our grandson is seven and looks like his grandpa. Designed two new machines and got a U. S. patent. That is all the news." . . . **Chick Kurth** remarks: "Belated reading of The Review was my first knowledge of your accident. Hope you are on the mend. We missed you last June." . . . **Laurence Buckner** replied: "Very nice to get your long reassuring letter. It took some of the scare out of the way it sounded in The Review." . . . **Bob Haskel** adds to his greetings: "Glad you gave seat belts a boost; I am very much in favor of them. Your write-ups in The Review are most interesting, and we always read them through at once before tackling the technical data." . . . **Phil Nelles** reports: "All is well with the Nelles family. So glad to read you're back in the groove again. Sure missed you and Mac on Alumni Day. Maybe you had better get yourself a chauffeur." We will continue excerpt-

ing the greetings in a later issue.

Dana C. Huntington, President of the Dennison Manufacturing Company, announced the marketing of a new one-step dry process electrostatic type office copying machine, capable of making copies direct from letters, documents or books without the need for the original to enter the machine. . . . **Philip T. Coffin**, who pioneered in developing aluminum conductors as the standard for electrical power transmission, retired last September after more than 37 years with the Aluminum Company of America. Phil was most recently the manager of the Alcoa Structural Division, which he headed since its formation in 1959. Following graduation from Technology in Bill Timbie's famous first group of Course VI-A, Phil joined Phoenix Utility Company in North Carolina as a line construction inspector. He then became associated with Public Service Electric and Gas Company in New Jersey, where he was engaged in planning a 220-kilovolt interconnection with two other utilities. He went to Alcoa in 1926 as a salesman of electrical transmission conductors and continued in this field through the development and early use of ACSR for transmission lines. During World War II, he managed an aluminum smelter built by Alcoa for the Defense Plant Corporation and, in 1945, he became assistant manager of the Alcoa District Office in New York City. He moved to Pittsburgh in 1949 as product manager for pig and ingot sales and manager of distributor sales. He returned to the electrical field in 1952 as manager of electrical conductor sales and then manager of electrical industry sales. Phil is the author of a number of papers presented at technical society meetings and in trade publications. He holds several patents in the conductor and accessory field. His memberships include the Institute of Electrical and Electronic Engineers, the Engineers Society of Western Pennsylvania, the New York Engineers Club, the Pittsburgh Duquesne Club, the St. Clair Country Club and the Masons. He is a member of Kappa Sigma fraternity. Phil and Edna make their home at 344 Jefferson Drive, Mt. Lebanon, Pa. They have three sons and two daughters and 13 grandchildren. A recent note from Phil says: "Since retiring, I have developed nothing but an increasing like for the life. We are going for a Caribbean cruise for most of January and then to Florida until April 1. Will try to see you in Glen Ridge." It was good to talk to Phil just before they started the cruise, and we hope to have a small 1921 reunion on his return.

Through the courtesy of Mrs. **Samuel Murray Jones** of 101 Monmouth Street, Brookline, Mass., we learn of the marriage of her daughter, Claire Joyce, to Richard H. Royston on December 14, 1963, at Wellesley Hills, Mass. . . . **Frank B. Kittredge** writes that his home address is 56 Academy Road, North Andover, Mass. . . . **Gustav C. W. Carlsson** also reports a new home address at Frejavagen No. 2, Stocksund, Sweden. If you watched the 75th annual Pasadena Rose Parade last New Year's Day, you may have recalled that **Jackson W. Ken-**

dall, Vice-president of Bekins Van and Storage Company of Los Angeles, Calif., is a pioneer member of the Tournament of Roses Association. He was recently honored with 10 other association members for his service to the Rose Parade over a long period of years. He recalls that he ran errands for the parade as a youngster. He served on the board of directors for 1933-1935 and has had numerous committee assignments. He remembers driving a Pope Waverly electric automobile in the 1908 parade and in 1919, he drove a float. Jack is an expert in rate studies, dating back to his work as a transportation engineer with the California Public Utilities Commission, and he is frequently called upon to speak on various phases of the subject to transportation industry groups. Jack is a past vice-president of the California Movers Association and has been with Bekins since 1937, including a two-year leave of absence for service in World War II. Jack and Marge have two sons and six fine grandchildren. He writes that he became a "semi-retiree" last January, but will still carry out duties in various rate cases. He is planning a trip to New England this year to show Marge the fall scenery. Jack sent us a colorful Tournament of Roses program, which added considerably to the enjoyment of watching the parade and the game.

We regret to record the passing of **Stanley Norman Juthe** of East Wolfboro, N. H., on September 2, 1963, and wish to extend to his family the sincerest sympathy of the Class of '21. Stanley was associated with us in Course II. He had been vice-president of the American Metallurgical Corporation of Boston and of the American Electric Furnace Corporation, also of Boston. . . . Calendar: Alumni Day on campus in Cambridge on June 15, 1964; 1921 interim reunion date and place to be announced when your votes are all in and counted; 45th Reunion, Mountain View House, Whitefield, N.H., in June, 1966. If you have enjoyed reading about others in this Class News, send us a letter about yourself right now so that others can enjoy your news.—**Carole A. Clarke**, Secretary, c/o ITT Data and Information Systems Division, Route 17 and Garden State Parkway, Paramus, N.J.; **Edwin T. Steffian**, Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston 16, Mass.

'22

Your secretary repeats his annual warning not to believe all of the snow bulletins and reports of Buffalo as they are from an area 20 miles south of the city. As of January 14, the streets were all clear and dry. . . . Our local papers have published pictures of **Gordon Cushman** upon the occasion of his retirement as district manager of sales for Bethlehem Steel Company, after more than 40 years of service. Gordon attended Brookline High School and Holbrook Academy before attending M.I.T. He joined Bethlehem in 1922 as a member of the Loop

Course training program and was assigned to the sales department in 1923. He was named assistant manager of sales in 1938 and became manager in 1949. He will probably go to Florida for the remainder of the winter. . . . **Nathan Cherniack**, economist for the Port of New York Authority, has received the Theodore M. Matson Memorial Award citation for outstanding contributions to the advancement of traffic engineering. The authority states that Nathan has pioneered in research leading to an understanding of the characteristics of traffic patterns and the development of techniques for determining and forecasting performances and the economic feasibility of vehicular and terminal facilities. His analytical skill, imagination and inventive talents were manifested in his responsibility for origin and destination and other traffic surveys and his economic studies in the planning of the Port Authority's bridges, tunnels and terminals. He has served as a special lecturer at the Bureau of Highway Traffic since 1936 and as a guest lecturer at other universities. He has also initiated new theories of travel analysis and methods of measuring and forecasting traffic patterns and the development of training for younger members of the profession in this field of traffic engineering.

Warren Ferguson enclosed an interesting news clipping in his most welcome Christmas greeting. The Peterborough Transcript of December 19 told that "Local bridge experts, Mr. and Mrs. **Winslow Morse**, received a silver bowl as champions of the Blue Ribbon Three-Session Open Pair Elimination Tournament played aboard ship on their recent return trip of Goren's Orient Cruise. There were 44 couples entered in the competition, many of them teachers. Winning of this award was quite a feather in the Morse's cap." . . . An announcement from **William H. Mueser** tells of the change of their firm name to Mueser, Rutledge, Wentworth & Johnston without change in personnel at 415 Madison Avenue. . . . **Whitworth Ferguson** is pictured in the Buffalo papers as the new chairman of the Buffalo Branch of the Federal Reserve Bank of New York. . . . **Ronald G. Macdonald**, treasurer of TAPPI, has been selected as the 1964 recipient of the TAPPI medal presented for achievements which have contributed to the technical progress of the pulp, paper and paper board industry. Through his activities as an author and technical editor and as an executive of the association from 1927 to the present, Dr. Macdonald has become one of the best-known figures in the pulp and paper industry. He received an M.B.A. degree from New York University and in 1952 was honored for his outstanding contributions with an honorary doctor of science degree from the College of Education of Western Michigan University.

The clever Christmas card from **Frank** and Carlys **Kurtz** shows their children and grandchildren enjoying winter sports and indicates that they have recently flown to South America, taken a ship to Portugal and Spain for a drive around the countries, and finally a steamer back to Fort Everglades and Delray Beach.

The sympathy of the class is extended to the family of **Latimer F. Hickernell**, who died in Dobbs Ferry following a heart attack on December 16. He was vice-president, engineering of the Anaconda Wire and Cable Company. He joined Anaconda in 1931 and was named chief engineer in 1933 and elected vice-president in 1957. He was a fellow and past president of the American Institute of Electrical Engineers and a member of other professional societies both here and abroad. He received honorary doctoral degrees from Grinnell College and Polytechnic Institute of Brooklyn. He is survived by his wife, Mrs. Estelle Cummings Hickernell, and two married sisters. . . . Our sympathy is also extended to the family of Dr. **William Duane** of Philadelphia. . . . Among new addresses received are those of **Ralph C. Geckler**, Nassau, Bahamas; **Brian Mead**, Scarsdale; **Thomas M. Taylor**, Naples, Fla. . . . May your spring be full of singing birds, blooming flowers and lower golf scores.—**Whitworth Ferguson**, Secretary, 333 Elliott Street, Buffalo 3, N. Y.; **Oscar Horovitz**, Assistant Secretary, 33 Island Street, Boston 19, Mass.

'23

Alan R. Allen reports that the movies he made of the 40th Reunion turned out very well. . . . **Horatio Bond** had a Christmas card from Lillian and **Robert V. Burns**, who give their address as P.O. Box 1010, Bangkok, Thailand. They wrote: "We are enjoying our stay in Thailand. In Bangkok we met **Prasob Sukham (Pra-Bisal Sukumvid)**. He is a very prominent local figure. At present we have four earthen dams under construction for irrigation, power and flood control. Next April we expect to return to the U.S. on leave so we may see you in Boston. You probably know that **Art (Arthur R.) Stuckey** has retired in Tucson, Ariz." . . . **Julian S. Loewus**, P.O. Box 18522, Atlanta 26, Ga., writes: "Sorry I couldn't get to the 40th Reunion. It was my desire but business interfered. Since I retired from the U.S. Coast Guard (I was in the Regulars) because of a service-connected disability, I have been raising shetland ponies (Registered stock) down in Louisiana." . . . **William S. LaLonde, Jr.**, Professor and Chairman of the Department of Civil Engineering at Newark College of Engineering and resident of Short Hills, N.J., is the new vice-president for Zone I (American Society of Civil Engineers). Professor LaLonde went to Newark College of Engineering (in 1929) as assistant professor and has been associated with the college ever since. From 1941 to 1946, he was on leave of absence while serving as an officer in the Civil Engineer Corps of the U.S. Naval Reserve, and now holds the rank of Captain, USNR (retired). Professor LaLonde has been an active member of the Metropolitan Section of A.S.C.E. for over 30 years and has served it as director and president. He has been chairman of the New York Annual Meeting Committee and active on many Section Committees and was director for District

I from 1953 to 1956. He has also served since 1955 on the Committee of Standards and is chairman of the Alfred Noble Prize Committee. He is author of "Professional Engineers' License Examinations, Questions and Answers, 1956" and editor-in-chief of "Concrete Engineering Handbook, 1960." He has been active in the American Society for Engineering Education and the American Concrete Institute.

The morning Boston Globe, on November 14, under the headline "Navy Sold on Sonar Eye," describes an interesting development of Raytheon's Submarine Signal Division, the Doppler Navigator, and goes on to say that "it is actually the brain-child of a 10-man team headed by **Edwin E. Turner**." The article describes the voyage of Raytheon's test ship which could have sailed, theoretically, around the world without the navigator once sticking his head out of the porthole to fix his position. "Turner claimed it is the first time a vessel has been navigated entirely by sound with precision." . . . A clipping from the Chelmsford, Mass., Weekly reports that **Bertrand A. McKittrick** has been elected to the Board of Trustees of the Belvedere School at Chelmsford. He is president of the Frank G. W. McKittrick Textile Machinery Company, a director of the Union National Bank and grandfather of three children attending the school. He is also a trustee of the Lowell General Hospital, the Lowell Y.M.C.A., Central Savings Bank, a corporator of the Lowell Five Cents Savings Bank, director of the Lowell Mutual Fire Insurance Company, director and vice-president of the Lowell Masonic Association and managing trustee of the Wyman Exchange Association of Lowell.

The following address pages are reported. **Charles R. Bailey**, 809 Riverview Court, Duluth, Minn.; **Paul B. Brown**, 8106 E. Jefferson Avenue, Detroit 14, Mich.; **John E. Burchard**, 564 Springs Road, Bedford, Mass.; **Nathaniel H. Frank**, M.I.T. Room 6-201, Cambridge, Mass.; **Anton W. Hosig**, 424 North Wood Street, Fostoria, Ohio; **Lawrence W. Jordan**, 130 Cherry Hill Circle, Branford, Conn.; **David Kaufman**, 629 Highland Avenue, Fall River, Mass.—**Forrest F. Lange**, Secretary, 1196 Woodbury Avenue, Portsmouth 1, N.H.; **Bertrand A. McKittrick**, Assistant Secretary, 7 Fletcher Street, Lowell, Mass.

'24

As these notes are being written, a blizzard is raging in the Great Court and the swirling snow gets thicker and thicker. It seems an appropriate time to turn our thoughts to warmer climes, to let us see what our Philippine contingent is up to. It just happens that **Hank Simonds** had the latest dope, and he shipped it along. **Emilio del Prado's** family has now reached such proportions that he's losing track: "Right now I have 24 grandchildren, and I do not know for sure how many more are on the way." They are spread all over the world. Del still enjoys

teaching and doesn't want to retire, but sees it coming up. He is professor of mathematics at Feati University in Manila. . . . Our other Philippine classmate is **Crisanto de los Reyes**. His family is not as numerous but they certainly have varied interests. Cris, Jr., is studying for the priesthood in Australia and will be ordained this fall. Yvonne, you may remember, was Miss Philippines a few years ago in one of the big beauty contests in this country. She is an accomplished ballet dancer, and last year spent four months in London learning to make 'toe shoes.' Now she's back home making them for local ballet schools and can't keep up with the orders. Cris is very concerned about the political situation there which he calls 'murky.' He doesn't like President Macapagal's friendship with Indonesia's Sukarno who, he feels, is a communist at heart. "The U.S. should watch the movements of Macapagal. He is no longer popular here."

This seems to be the month for retirement news. From DuPont comes the announcement: "**Hood Worthington**, technical director of the DuPont Company's Atomic Energy Division, elected to retire on December 31 after a 38-year career with the company." Hood has been in this end of the business for some years, but at one time he was the director of nylon research and is generally credited with being more responsible for the development of nylon than any other one man. . . . On the same date **David J. Sullivan** also retired from DuPont. He was sales manager of the Fabrics and Finishes Department. . . . And on January 1, **Cyril J. Staud**, Eastman Kodak vice-president in charge of research, retired. Cyril got his B.S. and M.S. from the University of Rochester, and his Ph.D. in organic chemistry with us. He immediately joined Kodak in the research labs and has been in that branch of the business ever since. He holds more than 100 U.S. and foreign patents and his list of societies and professional organizations is a yard long.

Carleton Shugg is an Annapolis graduate who got his master's degree in Naval Architecture in 1924. You may know him as former head of the Atomic Energy Commission, president of Electric Boat Company, or vice-president of General Dynamics. What you probably don't know, though, is how he hauled a submarine ashore back in 1927. The S-48 had been wrecked two years before and had been towed into the Portsmouth Shipyard. There it lay and no one could figure how to get it out of the water until Lieutenant Shugg came along. On February 3, while engineers from all over the country watched, he gave the signal which started three railroad locomotives straining at cables attached to the submarine's bow. It worked, and before long the sub was resting on the ways in the ship house. It's probable that, with all his later accomplishments, that one stands out prominently in his memory.

We told you last month we'd have a bit more on **David A. Meeker** in his new post as board chairman of Hobart Manufacturing Company. Dave joined the company in 1925 as a development en-

gineer. He was elected president in 1945. During the intervening years he has led the company from sales of some \$12 million to \$85 million in 1962. Hobart is one of the 500 largest U.S. industrial companies. It is worthy of note that the newly elected treasurer of the company is David B. Meeker, Dave's oldest son. . . . **Paul L. Miller** has joined the staff of Wiley, Block and White, Paterson, N.J., a firm of CPA's. Paul is director of management services. . . . **Howard I. Fitz**, a chemistry graduate with a further degree in law from Northeastern, was head of the science department at Chauncy Hall School for 35 years. He died in November. . . . Don't forget to return one of those slips to **Cy Duevel** telling him you'll be at reunion, and now that another tax year is here, maybe you should reconsider your part in our 40-Year Reunion Gift.—**Henry B. Kane**, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

Dave Goldman had planned a meeting at the 40th Reunion Committee a few evenings ago, and there should have been a great deal to report to you regarding some of the up-coming events planned for June of 1965. However, everything in New England ground to a halt on the date the meeting was scheduled, January 13, when a blizzard hit the area with 10 to 20 inches of snow and gale winds. Dave will be calling another meeting very shortly, and more information should be available to you a month from now. . . . A month ago, mention was made of **George Mahoney's** position with the firm of Oneglia-Gervasini, Inc., of Torrington, Conn. Within the last couple of weeks, information has come through to indicate that George has another most interesting activity which takes much of his time when he is not on the job. He has been an amateur astronomer for the past 30 years, and at one time taught astronomy in the Torrington High School. He has served as secretary and treasurer of the Central Connecticut Astronomy Association. This side of George came to light when he recently was guest speaker at a joint dinner meeting of the Litchfield and Harwinton Lions Clubs in Connecticut and his subject was astronomy. . . . The only other recent news item comes from the Central Illinois Electric and Gas Company in Rockford, Ill., stating that **Finlay G. Cameron**, who has been superintendent of electrical operations for this company's Lincoln Division, has been elected vice-president in charge of the Lincoln Division.—**F. L. Foster**, Secretary, Room 5-105, M.I.T., Cambridge 39, Mass.

'26

This is Class News morning at Pigeon Cove, mid-winter, 5 degrees above zero, sun shining and white caps about two

miles off shore from a stiff northwest wind. Heidi is at my feet, but there is no fire in the fireplace because we are going back to town early. Tomorrow I am going out to Detroit for a day and plan to see **Gordon Spear** in the evening to catch up on our classmates' activity in that area.

Classmate **Chet Buckley** recently brought us up to date on the Chicago area. I met Chet's brother, Elton, '32, last fall at an American Chemical Society meeting and was surprised and flattered to learn that he was a regular reader of '26 notes. Now let's see what Chet has to say: "Dear George, I have thoroughly enjoyed reading of the activities of our group in *The Review*. I am afraid that I have been very derelict in my duties of helping you with correspondence. While attending a meeting of the Chicago M.I.T. Alumni Group last evening, I decided to make a little contribution. As you mentioned in the class notes about a year ago, I moved to the Chicago area. I attended a couple of meetings of the Chicago group last year and found that the president of the club was **John Wills** of our class. The president of the club this year is **Bruce Humphreville**, also of our class. At the meeting last evening, Bruce, John, **Frank Romanoff**, **Deke Taylor** and I had a chance to group together for a few minutes before dinner. Bruce brought us up to date with a report of his visit to the institute this fall. In looking over the directory which is published by the Chicago club, I notice that there are several others in our class who live in this area. We shall hope to see them at future meetings of the club. Incidentally, when I was in Florida last winter, I visited **Nat Gada** in Sarasota. Nat took an early retirement because of health, but I am happy to report that he looked fine and seems to be enjoying his life of leisure. **Ben Margolin** keeps me posted on some of the activities back East. On one occasion about two years ago, Ben assembled some of the members of our class during one of my visits and showed us some of the moving pictures of our various class reunions. Sincerely, Chet."

I have a copy of the bulletin of the New York Chapter of a society that goes under the initials ASHRAE. I haven't the vaguest idea what these initials stand for but the speaker at their monthly meeting is our classmate, **Harold Ryan**. Therefore I can only conclude that it is the American Society of Harold RyAn Engineers that is meeting at the Brass Rail to hear our classmate talk about imminent changes in New York City's building code. The bulletin describes Harold's activities over the years in the fields of refrigeration and airconditioning and outlines the many committees on which he has served and concludes that he comes to the meeting as a speaker "with impressive credentials." Harold is a consulting engineer with offices at 101 Park Avenue, New York City, and we were pleased to hear that he is so active in his field. We hope if he reads this he will enlighten his class secretary on the meaning of the initials which we think we have guessed, all except the H. . . .

Here is a news release that just came in with a New York date line: "**William P. Lowell, Jr.**, Manager of Technical and Quality Control Services, Sylvania Lighting Products, Salem, Mass., has been elected for the two-year term 1963-65 as vice-president of the 10,000 member Illuminating Engineering Society. Mr. Lowell served as a director of the society and has been active in I.E.S. for many years. He is a fellow of the society and was 1960-61 treasurer. Mr. Lowell was a founder member of the National Electrical Manufacturers Association (N.E.M.A.) Lighting Fixture Section and served on many technical committees and was chairman of the section, 1952-54. I.E.S. is the United States and Canada representative organization of the illuminating profession and the recognized authority on lighting standards." That last sentence did not even give me a chance to guess on the meaning of these initials. Congratulations, Bill! . . . We have two pages of the 1963 Technion Year Book that came via *The Review* office. The two pages cover a message from the president of the American Technion Society, our distinguished classmate, architect, "**Barney**" **Gruzen**, and includes a fine photograph of Barney. I will not review the article, but there are a couple of interesting points. Technion, which is Israel Institute of Technology, is again getting me mixed up with letters that do not seem to decipher easily. The point in the article is that this technical institute, after only 15 years' existence, now has nearly 5,000 students and has become the heart of Israel's effort to develop its economy. Barney's effort on this project has been heroic and is most commendable.

Martin Staley always sends a Christmas card from San Antonio. "Dear George, The very first thing I do when *The Technology Review* comes is to look up the news of '26. I was area chairman of the Second Century Fund and in reporting the final results I called M.I.T. and talked to **Jim Killian**, which to me was the high point of the campaign. Am looking forward to our 40th Reunion; since I made the 30th, I feel the 40th is a must. Good health and much inspiration toward the class notes and many enjoyable times at Pigeon Cove. Sincerely, Martin E. Staley." . . . Another card from **Howard Humphrey**, fellow DuPonter, tells of a recent trip to Europe to visit his son, David, who is with the Army in Germany. . . . An unusual Christmas greeting from **John Longyear** of Detroit enclosed samples of dried parsley and sage from his garden with histories of these herbs. Apparently this is a hobby of John and his wife. I shall have tried to phone him when in Detroit on Tuesday. . . . **Dave Crockett's (Harrison)** Christmas card, which is an annual review of his large family's activities, became a production this year with six pages, six pictures and a map. Dave's business is in Grove City, Pa., where he makes his home, but his five daughters are all over the map including one with the medical department of the "S.S. Hope" in Ecuador. This about winds up the notes except to mention that on

Christmas afternoon Ruth and I drove out to Marblehead to gaze up the empty harbor and see how the place looked in winter. Being St. Bernard owners we were quick to spot one walking along with four people. It turned out that two of the people were **Edgar Stevens** and his wife and the other two were his son and daughter-in-law (or vice versa) who had brought the St. Bernard with them from California. Edgar has been with Boston Edison for a great many years and I believe lives in Marblehead; we stopped for a moment but didn't have much opportunity to talk. Again, as you see, we heard from several classmates this month. When will we hear from you?—**George Smith**, Secretary, E. I. duPont de Nemours and Company, 140 Federal Street, Boston, Mass.

'27

Continuing a life-time career with Johns-Manville, **Edward H. Wells**, a vice-president of Johns-Manville Sales Corporation, has been appointed general manager of their packings and friction materials division. The Wellses have lived in Darien, Conn., since 1950; before that in Rye, N.Y. . . . We wrote in the July, 1963, notes of **Constantine Bary's** recent career and his book on the operational economics of electric utilities. A card has now been received announcing that he has become a consultant in this field with offices at Fort Washington, Pa., P.O. Box 125. Good luck in your new work, Connie. . . . In reading Captain J. Y. Cousteau's "*The Living Sea*," I found many references to Dr. **Harold Edgerton's** work with the French scientists. Aboard the oceanographic ship, things were going on called "Edgertronics" and the French crew referred to the doctor as "Papa Flash." . . . Those of you who keep back numbers of *The Review* will find a long, interesting letter from **Amund Enger** in the January, 1958, issue. Since then there has been no news, until last week word came that he has moved from Oslo to Switzerland. The new address is shown below and I am writing for more details.

During a recent visit to New York, **Bob Bonnar** and **Anson Rosenthal** took me to lunch at the Chemists' Club, where there is an official M.I.T. table each day. Rosie, after being retired for some 10 years, is now sales manager of DAR Products Corporation. He is also the president. The company is the New York distributor for Vin-Lox caulking compounds. Nothing new with Bonnar except that I have never mentioned here that, on top of all of his other jobs, Bob is a member of the Educational Council of the Institute in the New York City area, and is going strong. . . . **The Woolfenden** Christmas card recorded that **Les** was recovering nicely from a retina operation. (There's an idea: why don't you all send me a card next Christmas and tell me how goes it?) . . . **Ed Damon**, our peripatetic retiree, is off for the Far East. . . . New addresses received: **Thomas M. Stetson**, 2d, 2 Alona

Avenue, Monument Beach, Mass.; **Constantine W. Bary**, P.O. Box 125, Fort Washington, Pa.; **Amund Enger**, Chexers/Nyon, Switzerland.—**J. S. Harris**, Secretary, Masons Island, Mystic, Conn.

'28

From **Jim Donovan** we received the sad news that **Thurston Hartwell** died suddenly on January 5. He had no problems and remained actively working until the end. We understand that he went for a ride that day, a Sunday, and died that night. His wife Ethel carries on. At Thurston's funeral the class was represented by Ruth and **Abe Woolf**. Abe was a high school classmate. We all enjoyed being with Thurston at our 35th. . . . Those of you who missed the news item in one of the front pages of the January Review will note with pride that **William Hurst** of Houston, Texas, was named by the American Institute of Mining, Metallurgical and Petroleum Engineers to be the 1964 recipient of its Anthony F. Lucas Gold Medal. The medal is awarded to recognize "distinguished achievement in improving the technique and practice of finding and producing petroleum." The citation on the certificate accompanying the medal states Bill was named "for his outstanding contribution to the understanding of the performance of petroleum reservoirs and his untiring counsel and guidance of young engineers in the petroleum industry." Formal presentation took place in New York City February 19 during the institute's 93rd annual meeting.

Bill was born in Boston, received his B.S. degree in 1928 in chemical engineering, followed by his M.S. degree in the School of Chemical Engineering Practice in 1929. He was one of the early petroleum reservoir engineers in the oil industry, employed by the Humble Oil and Refining Company of Houston, Texas, from 1929 to 1942. Here, joined with others, he successfully pioneered the application of the hydromechanics of fluid flow to oil field reservoirs, for which the outstanding example was the large East Texas Field discovered in the early thirties. This was followed by professional work with Core Laboratories, Inc. of Dallas, Texas. In 1943 he joined the Shell Oil Company as senior reservoir engineer in Houston, Texas, continuing that connection until 1948, when he resigned to enter into private consulting practice. With the Shell Oil Company and associates Bill advanced the concepts of transient fluid flow that encompassed the identification of reservoirs and the parameters; and in his practice he has extended this to the application of gas deliverability and deterioration factors, as well as its extension to define drainage radius of producing wells. These are now the continued interest of petroleum engineers as indicated by the increasing number of published papers presented each year to the industry. Bill is a practicing consulting engineer, having engaged in reservoir studies of the principal fields in the United States and

Canada, and in recent years in the Middle East and North Africa.

From a recent issue of the 'Hoosier Banker,' Indianapolis, Ind., we learned that **Dave Ingle** was elected to the board of directors of the National City Bank, Evansville, Ind., succeeding his father, David Ingle, Sr. Dave is president of the Ingle Coal Corporation, Elberfeld, Ind., and L. B. Jones Company, an Evansville furniture manufacturing firm. On graduation from the Institute he received a degree in electrical engineering—which just goes to show. . . . We recently learned that **John Russell**, who received his bachelor's degree in Architecture in 1928 and his master's degree in 1932, was recently appointed the first dean of the newly created Faculty of Architecture of the University of Manitoba in Canada. John has been on the staff of the School of Architecture since 1928 and was active director of the school from 1946 to 1963. . . . A note from the Alumni Register informs us that **George E. Francis, Jr.** moved from Palmyra, N.Y., to 211 Briny Breezes Park, Delray Beach, Fla. . . . A Christmas note from Class Agent **Charlie Worthen**: "had I realized that you were going to publish my remarks verbatim in the class notes, I would have been a little more careful of my grammatical construction." How about your spelling, Charlie?

After pleading and begging for class notes material, we hit the jackpot in a letter from **Ken Mackenzie**, who is superintendent of the Paper Mills Division of Eastman Kodak Company, Rochester, N.Y. We present the following as a prime example of a prize contribution: "I noticed in the class notes for October that you had requested all the boys to send in a resumé of their activities for the last five years. I suddenly realized that I have never sent a report of my activities, so here goes. Business: I have been with the Paper Mills Division of the Eastman Kodak Company since leaving the Institute, and for the last 17 years I have headed up this division with the title of superintendent and the function of manager. We have three paper mills with seven paper machines and manufacture approximately 150 grades of photographic base paper, paper for office copy systems and wrapping papers that come into intimate contact with photographic emulsions. It has been a fascinating business with never a dull moment in 35 years. In 1952 I made a four-week survey of the photographic paper industry of Europe; and in 1953 I spent four weeks surveying the paper industry of Brazil prior to establishing the manufacture of photographic base paper in that country for our sensitizing plant in Sao Paulo. . . . Family: I have been married to the same gal for 32 years, and we have not had any children. Hobbies: Coming from a seafaring family in Nova Scotia, I have always had a great love for the sea and an interest in 'far away places with strange sounding names.' Fortunately, my wife has the same interests so our main hobby has been foreign travel, travel photography, and the collecting of objects of art.

"Since 1936 we have made 18 trips to Europe, the Mediterranean, North Af-

rica, the West Indies, South America and the Orient, all by ships which have ranged from 12-passenger freighters to the 'Queen Elizabeth.' The following is a brief summary of the last five years' activities. "1963: We sailed from Los Angeles on the 'S.S. President Wilson,' had a day in Hawaii, one day in Yokohama while we went to Tokyo, six days in Hong Kong while the ship went to Manila and returned, then back to Kobe where we left the ship and spent three days touring Japan, catching the ship again at Yokohama. Then back to Hawaii for one day and back to San Francisco. This took six weeks. 1962: Early in April we sailed from New York on the 'Saturnia' of the Italian Line for the Azores, Casablanca, Majorca, Palermo, Devronnick and Venice. We laid over in Venice for two days and sailed on the 'Brendina' of the Adriatic Line for Alexandria where we disembarked for Cairo, where we stayed two days; then we caught the ship again at Port Said for Beirut, Syria, Iskenderun, Turkey, the Greek Islands, Athens, Greece and back to Naples where we arrived in the morning and sailed in the afternoon on the 'Leonardo de Vinci' for New York. This was a five-week trip and our second one to the Mediterranean. On the 'Brendina' we were the only Americans in 85 passengers.

"1961: We had planned the 1962 trip for 1961, but my wife was hospitalized for a month in January, and it seemed desirable to get her to a warmer climate for awhile. Although we had made four trips to the West Indies, we had never been in Jamaica, so this seemed to be a good time to do it. In early February we sailed from New York on the 'Santa Paula' of the Grace Line, which took us to Venezuela, Curacao, Aruba and Jamaica, where we stayed for two weeks. I rented a car, and we toured the Island. We then sailed on the Santa Rosa of the Grace Line back to New York by the way of Haiti and Port Everglades, Fla. We were rather disappointed in Jamaica and felt that we had been gyped out of our usual interesting trip, so about the middle of April we caught the 'Saturnia' of the Italian Line in New York and went to Portugal, where we rented a car and drove around 1000 miles in two weeks. Portugal is a delightful country and one of our two top favorites along with Italy. 1960: Early in April we took the 'Christobol' of the Panama Line from New York to Panama, where we stayed four days waiting for the 'Brazil' of the Johnston Line, a 25-passenger Swedish Freighter. On this ship we went down the West Coast of South America as far as Lima, Peru, stopping in at various ports along the way. We stayed in Peru for 10 days, visiting and photographing the Inca Ruins. We then returned on the Johnston Line freighter to Panama and back to New York on the Panama Line.

"1959: This year saw us heading for Europe on the 'Queen Elizabeth.' We picked up a car in Paris, spent a couple of days driving around the chateau country south of Paris, then headed east to Nancy, Baden-Baden, the Black Forest, Munich, Salzburg and Vienna, then back to the southern part of Austria to

northern Italy, where we spent a few days on the Italian Riviera, then across to the French Riviera for a couple of days, then up the Rhone Valley and back to Paris, sailing back to New York on the 'Liberté'.

"These five examples give you some idea of the type of traveling we have been doing. It keeps me quite busy for a full year working out the details of trips like these such as the ships available for a five or six-week trip at the time of year I want to make it, the places of interest I want to visit, the scheduling of driving time from one place to another, the items of interest to be photographed, and the possible objects of art to be picked up. Then there is the editing and titling of slides and 16 mm movie film and the showing of them to various groups takes up the rest of the time. Perhaps the biggest kick that we get out of travel is that when we read of activities around the world or read novels with foreign settings, we know the exact spot being described and it brings back happy memories to us. This has been a long letter, and I hope that it will make up for my negligence in the past. Will try to do better in the future." Please, how about a few notes on your own life and times that will assist your humble secretary to fill his monthly column?—**Hermon S. Swartz**, Secretary, Construction Publishing Company, Inc., P. O. Box 255, Lexington, Mass.

'30

Several weeks ago I had a pleasant lunch with **Lionel Pavlo**, who recently moved his Pavlo Engineering Company to 530 Fifth and now rides the same bank of elevators that I do. Lionel specializes in designing and supervising the construction of bridges, including, for example, the new Pennsville-Newcastle bridge across the Delaware, a Mississippi river bridge at Vicksburg and a study for A.I.D. on a bridge across the Niger in Africa. He has also completed a design proposal for a bridge from Orient Point to the Connecticut shore. His brother Alexander (M.I.T. '31) and daughter Anita are associated with him in business. Son Richard attends University of Nevada. Lionel reports that in recent years he has seen **Jon Gunnarsson**, who is an importer of fish from his native Iceland, and Spencer Buchanan, '31, who is operating a soil analysis laboratory in Bryan, Texas. . . . The September, 1963, issue of 'Architectural and Engineering News' carried an article about **George Nakashima**, who, as many of you know, is widely known for his hand-crafted furniture which he produces in New Hope, Pa., with the assistance of a work force of some 20 men. It seems that George feels that the modern architect "is out of touch with building fundamentals" and should again "get his hands dirty." His own aim is to produce "objects without style using the finest materials shaped with intense skill, inadequately termed craftsmanship." Particularly intriguing to me was the fact

that his studio has an undulating conoid roof and his lumber room a hyperbolic paraboloid roof.

Mark Purcell is vice-president of Siberg, Purcell and Cuthbert, architects, in Madison, Wis. He is a member of the Madison Building Board of Appeals and of the State Board of Registration for Architects and Professional Engineers, as well as a board member and former vice-president of the Wisconsin Chapter of A.I.A. His son Philip graduated from University of Wisconsin and is a lawyer in Chicago. He also has three young daughters. . . . As a third item for the architects this month, we have a notice that last October **Wayne Hertzka** (Hertzka & Knowles, San Francisco) addressed the Architect's Society of Ohio on the professional duties of the architect. . . . **Ernie Reisner** is with the Small Business Administration in Washington directing a program of small business surveys and registration for suitability as to government contracts. He is active in the M.I.T. Club in Washington where he reports having seen **John Riley** and **Dave Landen**. I believe John is with the Bureau of Ships and Dave with the U.S. Geological Survey.—**Gordon K. Lister**, Secretary, 530 Fifth Avenue, New York 36, N.Y.; Assistant Secretaries: **Charles T. Abbott**, 26 Richard Road, Lexington 73, Mass.; **Louise Hall**, Box 6636, College Station, Durham, N. C.; **Ralph W. Peters**, 16 Whitestone Lane, Rochester 18, N.Y.

'32

Through quick action of a neighbor and the local volunteer fire department, the lives of **Cecil Boling** and his wife were saved last May when a fire caused extensive damage to their home. They live on the C-B Farm in Litchfield, Conn., where they raise brown Swiss cows which carry off annual honors at the Eastern States Exposition. . . . **H. Archer Clark, Jr.**, who did graduate work at Tech in Course XV after graduating from Dartmouth, was a member of the management board at Phoenix Mutual Life Insurance Company, responsible for the new tower office building in Hartford, Conn. With Phoenix Mutual since 1935, he is now second vice-president and is in charge of the mortgage loan division. . . . Although **Joel H. Hirsch**, M.S., Course X-A, is listed in our alumni files as engineering division director of the Gulf Research and Development Company, Pittsburgh, Pa., his second article in three years on the calculation of the underlying values of common stocks has appeared in the 'Financial Analysts Journal.' As a procedure offered, "not primarily as a way to make money in the stock market, but rather as a way to keep from losing it," it forms an interesting application of his engineering and business background.

A lecture and seminar under the auspices of the M.I.T. Department of City and Regional Planning was conducted by Major **John W. Leslie**, Course XV, on the subject "The Connecticut River Basin Study." He is now chief engineer, U. S.

Army Corps of Engineers, Waltham, Mass., having been with the Corps since 1936. . . . We regret to report the death on October 3, 1963, of **R. Grice Kennelly**, Course V, of Milton, Mass.—**Elwood W. Schafer**, Secretary, Room 10-318, M.I.T., Cambridge 39, Mass.

'33

Your nominating committee, **George Henning**, Chairman, is anxious to present its report, ordered by **Pete DuPont**, President: For President, **Edward S. Goodridge**; for Executive Vice-president, **James E. Turner**; for Vice-presidents, **Dick Fossett**, **Ellis Littmann**, **Cal Mohr**, **Duke Selig**, **Beau Whitton**, **Charlie Bell**, **Dick Morse**, **George Henning**; Treasurer, **George Stoll**; Class Agent, **Lou Flanders**, and Secretary, **Warren Henderson**.

"You will note two changes in the officers' list; **Pete DuPont** is anxious to step down in favor of another, because of his much heavier load as vice-president of the DuPont Company (reported below), and **Bob Kimball's** passing created another vacancy, which **Warren Henderson** has consented to fill until the 35th Reunion in 1968. **Ed Goodridge** is willing to take over as president, and this choice appears to be very popular, indeed. We ask that you send your ballots to the new secretary at your very earliest convenience. And, why not add a personal note for class note use?" So, here goes.

Larry Jacobson tells us through their house organ, which he publishes himself, that he is still busy at his retail camera business. It was not evident whether or not Larry is still carrying on as an electrical engineer, but we know he is capable of doing both. . . . Not exactly new but surely worth mention is a story about our own Dr. **Ivan Getting**, President of the Aerospace Corporation. His firm "helps to plan Air Force Space Programs, suggests designs for boosters and vehicles to achieve those plans." Many of us enjoyed visiting with Ivan and his beautiful daughter at the 30th Reunion last June. . . . 'Automotive News' brings us up to date on the fine job that **George Vila** is doing as president of U.S. Rubber. George was made president in 1961 and had the job of getting the "tire" half of the business back on its feet from a profit standpoint. In less than two years, George is showing that a substantial profit is assured. . . . Not news to all of us is the story that **Pete duPont** was made vice-president and member of the executive committee at DuPont last May—a big boost for Pete. Collectively, we congratulate Pete. . . . **Edward L. Jones**, Chief Engineer of Cone Mills Manufacturing Division, Greensboro, N.C., was "tapped for the Water Pollution Control Federation's Industrial Wastes Medal," at the federation's 36th Annual Banquet in Seattle. Hurrah for Ed! . . . **Rafford L. Faulkner** has been appointed director of raw materials by the Atomic Energy Commission. Rafford has had a long and distinguished career as a geologist and mining engineer, both in private practice in South America and in the service of the federal government since 1940, except for a

hitch in the Navy. This classmate deserves a note of congratulations from some of us.

Those who attended the 30th Reunion last June will remember Colonel **C. T. Newton**, who was the principal speaker at the Class Dinner. The Colonel gave quite a lengthy, witty and interesting talk on the Corps of Engineers, U.S. Army, to which he had been attached almost since graduation. On October 28, 1963, the Army announced the Colonel's retirement to go into private practice. He did not mention in his talk to us that he had been awarded the Legion of Merit three times, the Air Force Commendation Medal, the French Croix de Guerre with Palm and the Italian Cross of Valor. We all wish the Colonel the very best in his new work. . . . I have before me an article from the September issue of 'Radiologic Technology' by Dr. **John G. Trump**, who took his doctorate the same year that we took something less. The article is about the medical uses of the electrostatic generator (Van de Graaf). These machines are in wide use for the treatment of malignant diseases, replacing radium, and Dr. Trump is one of the pioneers. More power to the good doctor and fame to our beloved Institute. . . . In passing, we would like to mention our classmate, **Bob Winters**, President of the M.I.T. Alumni Association. Bob Winters is a former cabinet minister of Canada and has been active in Canadian business during a busy career. (See the January Review, "Trend of Affairs," for an account of Bob's latest project.) . . . A news release told us of **Lewis W. Moore's** election to the board of trustees of the Illinois Institute of Technology last fall. I.I.T. has expanded greatly in the past few years. Its buildings now stand where, only a few years ago, was a slum area. Lewis is president of American Oil Company. . . . **James E. Norcross** was elected to the board of the American Welding Society, as director at large. Jim is executive vice-president of Arcos Corporation of Philadelphia. Apparently, Jim has been active in both Arcos and the American Welding Society since a way back; our congratulations to Jim.

The above material comes from the press and printed word, in many forms. But we want personal news too. The other fellow wants to know what you are doing; who saw whom; how many are doing what, and who got caught at it! The age-old excuse of being too busy is no good; it is a maxim in industry these days that if one wishes to get something done, give it to any busy man. So let us hear from you.—**Warren J. Henderson**, Secretary, Fort Rock Farm, Box 14, Exeter, N.H.

'34

The reunion tops the news and **Walt McKay** reports: "The 30th Reunion Committee has had excellent response to its letter of November 12 last. As this is written on New Year's Day, replies have been received from 170 Classmates, 53 of whom said 'Count me in' and 47 more who are 'Not sure but hope to come.' Out

of this gratifying total of 100, 61 would bring wives and 14 would bring 17 children. Without a doubt, this presages a large turnout next June on Cape Cod. As you read this, you will have received a second letter from the committee calling for reservations—if you haven't yet sent yours in, this is a reminder to do so.

John G. Borger, 392 Schraalenburgh Road, Haworth, N.J., has been appointed chief engineer for Pan American World Airways. In this capacity and as a member of NASA's Research Advisory Committee for Aircraft Operating Problems, he plays an important role in the development of new aircraft for the commercial aviation industry. An associate fellow of the Institute of Aeronautical Sciences, Mr. Borger is an author of technical papers on air transportation and has lectured at M.I.T. seminars. He is a member of Tau Beta Pi and Sigma Xi fraternities and the Wings Club. Mr. Borger and his wife have three children, John, Lawrence, and Barbara. . . . It is with regret that I report the death of **John H. Keatley** on October 19, 1963.

. . . **Elbert J. Baril** has been named acting state planning director in New Hampshire. He returns to New England after 10 years with the Miami, Fla., city government. . . . **Frank A. Faillace**, as participating associate for Skidmore, Owings, and Merrill for the past five years has been involved in production of interiors. He has functioned as project manager for various New York office architectural projects. . . . Two of **Ken** and **Peg Ryder's** daughters are going to Europe this coming summer. Sue, who teaches art at the Toaz Junior High, Huntington, Long Island, will teach in Europe for a year, and Lynn is traveling to see "people not places." . . . We hear that **George Merryweather** became the father of twins, Hubert Fremont and Janet Esselborn, on June 24 last year. Congratulations!—**M. S. Stevens**, Secretary, 9 Glenfield Road, Barrington, R.I.; **J. P. Eder**, Secretary, 1 Lockwood Road, Riverside, Conn.; **G. K. Crosby**, Secretary, 44 Deepwood Road, Darien, Conn.; **H. E. Thayer**, Secretary, 415 West Jackson Road, Webster Groves 19, Mo.

'35

Well, only another month and a half and we will be trying out all the new golf techniques we "perfected" while watching one of the television golf shows this winter. Your secretary has been practicing with a new putter on the living room rug since his 10th anniversary last November 28. It's called a Black Magic Putter and has a carbon insert in its face. If I can practice a little black magic on the greens this summer, I may be able to get past the second round in our Class Golf Tournament. . . . The following note received from **Walter Stockmayer** is printed without editorial comment: "Very recently on one of my rambles in the White Mountains, I had occasion to get involved in a backwoods spiritualistic seance conducted by a local witch (consult Robert Frost's poem "The Witch of

Coos"), and there I learned something of interest to your column. With an evil toothless grin, the hag delivered the following message from the spirit world: "Let no man trust the prognostications of **Beckwith** with respect to the population problem. No technological Walter Winchell, he! He had his **Golden** opportunity and bungled it. Deny it as he will, Beckwith is hereby notified from the ectoplasmic regions that there will be another Golden in 1964." Although I ain't no mystic by nature, the local characters assure me this particular pipeline is reliable, so I will go out on a limb and support the above prediction. Best wishes to all for '64."

Edward N. Richards, XVII, received quite a write-up in the Raleigh Times recently: "Like the man who came to dinner, E. N. Richards came to North Carolina and just stayed and stayed and stayed. A native of Long Island, Richards became associated with his father's building firm on Long Island after leaving M.I.T. He later worked with a cousin in residential construction at Port Washington, L.I., then joined American Houses of New York in 1940. It was while working with this firm that he built houses at Cherry Point. He was getting tired of travel and wanted to find a place to stay put. He liked North Carolina and decided to make it his home. After leaving American Houses, he built a community of 149 houses in Winston-Salem. He has branched out until he now has residential and shopping center projects in Jacksonville, Wilson, Chapel Hill, Goldsboro, Winston-Salem, Wilmington, and Fayetteville, as well as Raleigh. Here he has North Hills, the Ridgewood shopping center and development Woodcrest, Pinecrest and Biltmore Hills. He maintains offices here and in Jacksonville. In addition to doing his own construction on his projects, he does a lot of land planning and development for other groups. He is also active in civic work. He lives at Budleigh with his wife and three children."

Roger S. Brookman, IV-A, is vice-president of operations and one of the founders of the Dustex Corporation. He is currently responsible for the engineering, development and production of the Dustex Line. . . . The New Hampshire Insurance Company at a recent meeting elected **Lawrence C. Hall** to the board of directors. Larry has been with them since 1944 and has served in a number of capacities with increasing responsibilities. He now lives at Mt. Vernon Road, Amherst, N.H. . . . Dr. **Joseph L. Fisher**, XVII, President of Resources for Future, Inc., of Washington, D. C., gave a lecture and led a seminar recently at M.I.T. on "Public Policies for Resource Development." . . . **Isaac H. Munro**, X-A, Vice-president, Marketing of Allied Chemical Corporation spoke at the January 8 meeting of the Chemical Industry Association in New York. . . . **Carlos Lavenas** has moved up from Buenos Aires to 800 Forest Avenue, Westfield, N.J. . . . Dr. **Ralph B. Woolf** is on the faculty of Washington University School of Medicine in St. Louis and lives at 46 Granada Way, St. Louis 24, Mo. . . .

Allan Q. Mowatt is serving on the 1964 Alumni Day Banquet Committee. In order to cut off 15 to 20 minutes of travel each way to Attleboro, the Mowatts will have moved to the address given below by the time you read these notes.—**Allan Q. Mowatt**, Secretary, 61 Beaumont Avenue, Newtonville 60, Mass.; Regional Secretaries: **Edward C. Edgar**, Kerry Lane, Chappaqua, N.Y.; **Hal L. Bemis**, 510 Avonwood Road, Haverford, Pa.; **Edward J. Collins**, 904 Merchandise Mart, Chicago 54, Ill.; and **Gerald C. Rich**, 105 Pasatiempo Drive, Santa Cruz, Calif.

'36

When George, Martha (our 16 year old) and I returned to Winchester on January 4 after two weeks in Seattle, we found a pile of Christmas cards awaiting us. Two of them included messages of general interest to all of us. Kathleen (**Kay Shott**) Cummins reported a new address, 3115 Twig Lane, Bowie, Md., and some personal news. Kay retired from the Air Force last March and after a bit of traveling she and Bill (also retired) decided to settle in the Washington area. She comments that after 21 years of nomadic living it is pleasant to settle into a home of one's own—a luxury which many of us take for granted. . . . **Hank Lippitt's** Christmas Newsletter is fascinating reading. Starting with a trip to Australia and New Zealand (on 10 days notice) and graphic descriptions of the latter's mountain scenery, our hero returns to California and with renewed vigor jumps into the fray ("California's best utility fracas since the farmers dynamited Los Angeles' Inyo-Mono aqueduct"). As executive vice-secretary of the California Gas Producers Association, Hank has been busy battling the Public Utilities Commission, but not so busy that he has had no time for extra-curricular activities. His interests include an investment in the Northwood Lodge and Golf Course on the Russian River in the redwoods north of San Francisco. In August he spent two weeks in Switzerland, in the course of which he covered some of the same country which George and I had visited in June. The weather was fairly consistently bad for both visits—par for the course in that country.

New addresses to report include that of **Walter Seinsheimer** at 602 Terrace Hilton Building, Cincinnati 2, Ohio; **Ollie Angevine**, Easter Avenue, R.D. 3, Ballston Lake, N.Y.; and **Alfred Dasburg**, 111 Carverdale Drive, Rochester 18, N.Y. . . . The entire Kimball family spent the holidays in Seattle where our eldest daughter, Prudence, was married on December 28 to David Phillips. Our son Tom, a student at Case, and daughter Sue from Lawrence College, joined us there. It was quite a change from a New England Christmas, but I do enjoy the Northwest and hope to visit there again in May when I have been promised a back-packing trip along the shore from Ozette Lake.—**Alice H. Kimball**, Secretary, 20 Everett Avenue, Winchester, Mass.

'37

Dr. **Vladimir Haensel** has been named a vice-president and director of research at Universal Oil Products Company. With UOP since 1937 and director of process research since 1955, Dr. Haensel is considered an authority on catalysis and hydrocarbon conversion, two major fields of modern chemistry; he has authored many technical articles dealing with the subject of catalysis and has appeared before learned groups in this country and abroad. After receiving his M.S. in chemical engineering at M.I.T., he continued his scientific work under the late Professor V. N. Ipatieff, world-renowned expert in catalysis, both at UOP and at Northwestern's Ipatieff High Pressure Laboratory. He received a doctor of philosophy degree in chemistry from Northwestern in 1941. . . . In 1945, as a member of the U.S. Technical Oil Mission for the Petroleum Administration for War and on leave from UOP, Dr. Haensel inspected the German synthetic oil industry. Returning to UOP in August, 1945, he was appointed co-ordinator of cracking research and director of process research in 1955. Dr. Haensel holds more than 100 patents. He has held a number of important posts in the American Chemical Society; he served as a member of the advisory board of Industrial and Engineering Chemistry, an ACS publication, and has been a member of several American Petroleum Institute advisory committees. He is a member of Phi Lambda Upsilon, Sigma Xi and Tau Beta Pi honorary professional fraternities and of the Northwestern University Technological Institute advisory council. He received the Chicago Junior Chamber of Commerce award for scientific achievement in 1944, the Precision Scientific Company award in petroleum chemistry in 1952, the Professional Progress Award of the American Institute of Chemical Engineers in 1957 and an honorary degree of doctor of science from Northwestern University in 1957. His home is in Hinsdale, Ill.—**Robert H. Thorson**, Secretary, 506 Riverside Avenue, Medford, Mass.; **Prof. S. Curtis Powell**, Assistant Secretary, Room 5-325, M.I.T., Cambridge, Mass.; **Jerome Salny**, Assistant Secretary, Egbert Hill, Morristown, N.J.

'38

Among all the other diversions of Christmas comes the do-it-yourself psychology of the Christmas card. Does that card look like Joe? Is he exhibiting nostalgia for the cultured East? How about a clue to avocation? Can there be that much fantasy in an engineer? And if you're a class secretary, you also ask, "Can that be a mirage!" Taking a stack of cards and a typewriter in hand, we come first to **Ira Lohman** who boosts the space age, posing with Louise and the family under the wing of their Cessna! This is the only private plane in my card collection. After having previously ad-

mitted that some of his flying is for business, Ira points out there are also possibilities of pleasure, and that visits would be easier, "If planes could land on rooftops as Santa's reindeer do." . . . I would group **Jack Chapin**, **Don Severance**, and **Frank Atwater** among the traditionalists for their selection of winter snows and peaceful vistas, each punctuated with a simple steeple. Hard by are the romanticists **Frank Gardner** and **Lew Hull**—Frank and "E" with a 15th Century oil and Lew and Miggie with a misty far-eastern dream. Next there's fantasy from **Fred Reuter**, **Dave Acker**, **King Coombs**, and **Dale Morgan**. **Al Wilson** found an appropriate synthesis of their interests when he and Carol selected a 16th century blueprint of a cathedral. **Bruce Leslie** and Ruth selected a watercolor of New England boats in furled snow; I predict they will be out on Narragansett Bay the first week-end the ice is off the rigging of the 'Ariel'! **Ed** and **Jean Hadley's** card says: "And it came to pass in these days, that there went out a decree from Internal Revenue Service that all the country should not only be taxed but numbered." And to cap that, *Wir wünschen auf Bert Grosselinger eine gemütlichkeittliche Jahr.*

It was only a short flight back to reunion, which included a special luncheon with members of the faculty. We intended to bring you an account of who was there, but in the abandon of camaraderie, no one kept the necessary records! Detective work by Frank Gardner and **Paul Black**, aided by the indefatigable **Fred Lehmann**, '51, turned up a probable list. Then I was inspired by **Lew Hull** and **Haskell Gordon** to make a careful study of the photographs shot among the tables at the luncheon. Cross-check of these pictures against the lists identifies the following professors and friends: Professor Avery Ashdown, '24, (organic chemistry). Avery got to know all of us who were chemically oriented in our junior year, and has kept in touch with an amazing number. As a professor emeritus he is now busier than ever, discouraging currently on the need of every professor to seek out his students rather than wait to be consulted. . . . **William Carlisle**, '28, (Walker Memorial): Bill guided the student waiters in Walker (one of relatively few jobs available in our day) so well that he is now manager of all student personnel. It was Bill's southern antecedents that made him such an ardent champion of the Assemblies Ball. Mrs. Karl Compton: One of our luncheon speakers, Mrs. Compton confided in us that soon after Dr. Stratton joined the M.I.T. Faculty she had recommended him to Dr. Compton as a future president! Mrs. Compton's warmth and understanding are unabated. Professor and Mrs. Raymond Douglass, '31, (mathematics). R. D. was able to anticipate the troubles with M11 pretty well, because he had been teaching it for 15 years when we first saw him! His perpetual exuberance is still inexhaustable, and he is still the champion of student welfare. Professor and Mrs. Leicester Hamilton, '14, (chemistry): Freshman Chemistry was a definitive experience that separated the artisans from the thinkers, and

there were two grades—a report card bearing Ham's judgment, and a bill for broken glass. Ham also had the responsibility of the Dormitory Board, but I think our behaviour was more responsible and less malicious in those days. Mrs. Hamilton, of course, was one of the wonderful party girls we could always count on to chaperone our dances! Dean and Mrs. Thomas Pitre (assistant dean): Pete's phenomenal memory for students has now reached such capacity it must be more complex than any binary system! He knows everyone who was ever called into the Dean's Office, which includes most of us, and he remembers enough of the favorable anecdotes to make you wonder if it stops there! Delbert Rhind (Bursar): Remember when a \$5 fine was a momentous sum, and when you could eat for two weeks on the \$10 check that Del cashed for you? I cannot recall any time since, when I have owed money to anyone who has been so understanding and so pleasant about it. Dr. ('23) and Mrs. Julius Stratton: Dr. Stratton spoke briefly on the changes in the Institute over 25 years, particularly the evolution of the world into which today's graduates are thrown, and the modified function of the Institute as it loses in percentage of total students but rises to even greater prominence as an example and pace-setter. Professor ('20) and Mrs. B. Alden Thresher (Admissions): Bat has a close relationship with us, because we were the last class for whose admission he was not responsible! Remember from our 20th reunion how knowledgeable and practical he is about the full spectrum of admissions problems? Professor Samuel Zeldin (mathematics): Sam and R. D. have chronologically identical Institute careers! They must have teamed together with a one-two approach to us, and I guess this combined power was highly successful. There were at least four others of our Faculty who dined and reminisced with us, but my pictures caught them from such a distance or at such an angle that I cannot resolve the uncertainty. It is apparent that the so-called indifference of faculty to students was as pure a myth 25 years ago as it is today.

Frank Atwater was elected vice-president of operations at Fafnir Bearing last fall, and somehow the note clung to the inside of the mailbag until now! Frank is one of that small group of us who have been associated with the same company throughout. He joined Fafnir in 1939 after a year as assistant to Professor Schell, and became industrial engineering manager in 1946, assistant works manager in 1953, general works manager in 1956, vice-president of manufacturing in 1957. In his new responsibilities Frank has the three New Britain areas of sales, engineering, and manufacturing reporting to him. . . . **Jack Rosenberg**, at about the same time, joined Wyle Laboratories as chief engineer for the Manufacturing Division responsible for all the engineering functions of producing computer components, electronic systems, and environmental test chambers. Jack has been working on digital computers for 17 years—at Princeton, General Electric, Stromberg-Carlson, and Hughes. With

Professor VonNeuman at Princeton, Jack was one of the six engineers who developed the first stored-program digital computer. At Hughes he had been assistant project manager for the anti-submarine warfare computer program. . . . **Albert Stone**, Technical Assistant to the director of the Applied Physics Laboratory of Johns Hopkins University, is retiring as chairman of the editorial board of the 'APL Technical Digest.' Al took his Ph.D. with us, carried on many research activities, and served in the Radiation Laboratory. After cutting his editorial teeth on the board of the 'M.I.T. Radiation Laboratory Series,' he became the founder of the 'APL Technical Digest' contributing to a better understanding of the work of the laboratory. He will now have a little more time to tend the store as supervisor of the Plasma Physics Research Group; in addition he has overall cognizance of the Technical Reports Group, the External Relations Group, and the Presentations Office; furthermore he is advisor to several boards and committees!

Paul Black, manager, marketing headquarters for Sylvania Electronic Systems, keeps a steely eye on the trade journals. He reports: "From this source I learned that **Gladyn Putt** has been named general manager and vice-president of space programs for the Lockheed Missiles and Space Company in Sunnyvale, Calif. I also note that **Wenzel Wochos** was appointed director of engineering for Cannon Electric Company in Los Angeles last summer. I have had very little contact with the class except for the evening Ruth and I had dinner with Don and Phyl Severance and **Jack** and **Eileen Bethel**. We all agreed that the 25th was the best ever and hope we do not have to wait another 25 years to have such an enjoyable get-together."

There are two deaths to report. **J. Robert Duncan** died on November 22. Bob had been with the Davison Chemical Division of W. R. Grace Company. We all prefer to remember him in the relaxed enthusiasm he brought to reunion last spring. . . . **Frederick A. FitzGerald**, one of the older members of our class, had retired as supervisor of the Boston Health Department, and died November 8 in Pinellas Park, Fla.—**Frederick J. Kolb, Jr.**, Secretary, 211 Oakridge Drive, Rochester 12, N.Y.

'39

This is the issue of the Class News when Christmas card notes from '39ers can first appear. Right on schedule are the following, from the faithful few who help make the life of a class secretary a little easier! Captain **Frederick A. P. Cooke**, CEC, USN, has moved back to the United States after his highly successful tour of duty in Japan. New address: 3509 Patterson Street, N. W., Washington 15, D.C. New job: at BuDocks, as assistant chief for family housing. Fred served in Japan as officer in charge of construction, Bureau of Yards and Docks Contracts, Far East; and commander, Naval Forces, Japan,

force civil engineer. As such, he did such an excellent job that he became the first such O.I.C.C. to be decorated by the Japanese Government. He was awarded the Third Order of the Sacred Treasure. A portion of Fred's citation, as reported in full by "The Navy Chief Engineer" for November, 1963, reads: "the outstanding accomplishments during his tenure of office in Japan, and immensely valuable contributions made by Captain Cooke towards furtherance of the U. S.-Japan friendly relations, are highly appreciated and remembered by the Government of Japan and its people." Eugenia Cooke also won for herself a commendation: she was awarded honors from the Japanese Navy in recognition for her English teaching prowess!

Hal and **Hilda Seykota** are now in Holland, at Lindelaan 27, Voorburg. That is quite a jump from his last stop, in Cartagena, Columbia, where Hal was working on the construction of a 12-million dollar fertilizer plant. Currently he is helping sell a plant to convert butane to 99.5 percent pure hydrogen, and expects to build the plant there in Holland in 1964. Hal's letter, like that of the Cooke's, was filled with travel adventures. . . . **Manning** and **Connie Morrill** wrote from Spartanburg, S. C., where Manning is executive vice-president of the CRYOVAC Division of W. R. Grace Company, with headquarters at nearby Duncan, S. C. He spends considerable time traveling, and when home is a director of the Red Cross, on the Budget Committee for United Fund, and a member of Rotary. He tops this all off with activity in the Unitarian Fellowship, joining Connie who also is active in this church work. The two oldest Morrills, Pat and Sally, are at Abbot Academy in Massachusetts. Pat is a senior, and a National Merit semi-finalist. She has been accepted at Wellesley on early decision.

Richard (Dix) Loesch wrote "Bob Withington, John Alexander, Hans Bebie, Jim Barton, and I are all holding down the fort for the Class of '39 in the Northwest. I suppose you never hear from any of us, probably because Seattle is such a marvelous place to live with so many things to do that we can never get around to writing." Now, that's candid partisanship for you! I hope some of those dyed-in-the-wool Northwesterners can tear themselves away from that part of the country long enough next June to attend the 25th Reunion. . . . Here's one couple definitely planning already for reunion time; **Bill** and **Adie Pulver** wrote: "We will certainly see you in both Wellesley and Cambridge in June." That invitation, of course, was directed to the several '39ers, myself included, who managed to pick up a Wellesley wife along with a Tech degree. So what about the rest of you?—**Oswald Stewart**, Secretary, P. O. Box 1238, Moravian Station, Bethlehem 18, Pa.

'40

During the past month I received the following pleasant note from **Dan Crosby**: "Dear Al, I can sympathize with

you in your efforts to find stuff for the '40 column. It seems that some months you do get a spate of news however. What do you do, wait two months, then put a quarter year's supply in the third? I wish I could pass on something exciting like becoming third vice-president in charge of stationery supplies at Socony-Mobil. Alas, I am still half an engineer. Economic calculations on new investments is my current task. Call it venture analysis if you want to get fancy. It goes without saying that all calcs are 'optimized' with the aid of linear programs which naturally makes them more accurate. Apparently I live within 15-cent dialing of **Frank Penn** and **Tom Creamer**, who were both tremendous guys, and it would be a pleasure to see them again. How lazy can I get? I will confess that my son Ned is a freshman at the Institute this term, which, oddly enough, makes me feel both old and younger again. It is of some statistical interest that he is a third generation student, as my father was '05. I am informed that there have been many third generation students, but have no idea if any others are in his class. When I look at the stuff he is doing, I would hate to try to do it again! (Or has he got me snowed?)

"Actually my conscience bothers me most for losing contact with **Billy Stone** and **Jud Rhode**. Have you heard of, or from, them? And say, if I should get transferred to Kordite Company which we own, then **Howie Samuels** would be my boss. How about that! All for now but if you'll drop me a reminder I'll fill you in further on life in this Pearl of Fairfield County. Fond Regards, Dan" . . . Bill Stone is associated with **Beano Goodman** in the Madison Chemical Company in Madison, Ind. . . . Jud Rhode is in Wilmington, Del.

Don Erb has been appointed vice-president of engineering of Instron Engineering Corporation, manufacturers of precision materials testing instruments. Don, his wife Susan, and their son Tom reside in Dover, Mass. . . . **Sam Goldblith** has been named the head of an advisory board of food consultants to the Kashruth Authority of the Vaad Hara-bonim. The Kashruth Authority determines whether or not a product is kosher. In view of the growing complexity in food processing and the many new chemicals which are employed, it has been found necessary to have the guidance of an expert such as Sam in this field. . . . **Ed Seim** has been elected vice-president of manufacturing of the Westinghouse Electric Corporation. Since 1962 Ed has been general manager of the Micarta Division of Westinghouse.—**Alvin Gutttag**, Secretary, Cushman, Darby & Cushman, American Security Building, Washington 5, D.C.; **Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge, Mass.

'41

Luke S. Hayden was chairman of the United Community Services annual drive for 1963 in Pittsfield, Mass., where he

succeeded in beating the assigned goal of \$464,602 by in fact raising \$465,009. This is the highest amount ever raised in a United Community Services or Community Chest drive in Pittsfield. Luke first took residence in Pittsfield in January of 1959 when he assumed the presidency of the City Savings Bank. A native of Brooklyn, N.Y., Luke presently resides at 140 South Mountain Road, Pittsfield, with his wife Dorothy and their four children, Patricia, Suzanne, Mary Eileen and Luke, 3d. . . . **Alvin H. Hartman**, Vice-president of Narragansett Capital Corporation, a small business investment company headquartered in Providence, was elected to the board of governors of the National Association of Small Business Investment Companies at its fifth annual meeting, held at the Plaza Hotel, New York City. He will serve a one-year term. Al is also a member of the executive committee of the Northeast Regional Association of SBICs (Small Business Investment Corporations), and with his election becomes one of the 29 governors who direct the activities of the SBIC industry trade association, with over 400 members located in all parts of the United States.

William F. Orr has been appointed marketing research manager for the film operations of Olin Mathieson Chemical Corporation. Bill was previously assistant to the film production manager. He joined Olin in 1948 as a chemical engineer in the film section of the research and development department, East Alton, Ill., and subsequently served in film production in Pisgah Forest where the first of two Olin cellophane plants was built. He is a member of Alpha Chi Sigma, honorary chemical fraternity; the American Marketing Association, and the Society for the Advancement of Management.

Gerald W. Lawson, who is Manager, Mechanical Systems Design Engineering, Small Aircraft Engine Department of the General Electric Company, has just completed G.E.'s nationally famous Modern Engineering Course held at the Gideon Putnam Hotel, Saratoga Springs, N.Y., for G.E. engineering executives. The course is designed to keep experienced engineering managers abreast of the latest developments in science and engineering; it consists of 102 sessions on latest advances in mathematics, relativity, modern physics, chemistry, metallurgy, control systems and computers. Gerald resides at Sprucewood Circle, Boxford, Mass.—**Walter J. Kreske**, Secretary, 53 State Street, Boston 9, Mass.; **Henry Avery**, Assistant Secretary, 169 Mohawk Drive, Pittsburgh 28, Pa.; **Everett R. Ackerson**, Assistant Secretary, 16 Vernon Street, South Braintree 85, Mass.

'42

William D. Robertson, Chairman of the Department of Metallurgy at Yale University, gave the fifth William B. Coleman Lecture at the Franklin Institute in Philadelphia last year. The talk,

which is an extremely interesting one, is reprinted in the October, 1963, issue of 'Materials Research & Standards.' Bill's thesis was that, "progress in the use of materials, as in many other areas, is impeded by a synthesis gap—the discrepancy between our ability to analyze complexity and our inability to deal with it. The great need today is not for more facts but for greater understanding of the facts already known. Only then can matter be truly shaped and designed to serve the needs of man." . . . The only other bit of information I have this month is to make the most unhappy report that **Burnett M. Pitt** died suddenly on January 1, 1964. He is survived by his wife Ruth and daughter Susan. Unfortunately, I have no further details.—**Jack Sheetz**, Secretary, Room 7-203, M.I.T., Cambridge 39, Mass.

'43

Dr. James B. Reswick, Professor of Engineering and director of the Engineering Design Center at Case Institute of Technology, was named to one of the two recently established professorial chairs established there, appointments to which are made to faculty members whose contributions to teaching and research have earned for them national and international reputations in engineering education. Jim, who received his doctor's at M.I.T. in 1954, has been a member of the Case faculty since 1959 and head of their Engineering Design Center since its founding in 1960. . . . **Gage H. Crocker** has been promoted to colonel in the U.S. Air Force. He is head of the Department of Aeronautics at the Air Force Academy in Colorado. He received his masters' in aeronautics at California Institute of Technology, and a master's and doctor's from the University of Michigan. . . . Two classmates at Allis-Chalmers have received promotions: **A. Joseph Mestier, Jr.** became manager of merchandising for the electrical apparatus and systems division, and, as previously reported in these notes, **Frank E. Briber, Jr.** is now manager of their process equipment and systems division. Both have been with Allis-Chalmers since 1946. . . . **Dr. John G. Linvill** was among five outstanding alumni of William Jewell College recently honored there during Achievement Day ceremonies. He is a professor of electrical engineering at Stanford, where he is also a director of the Solid-State Electronics Laboratory of the Stanford Electronics Laboratories.

I received Christmas greetings from the **George Marakas** family, now of Cincinnati, Ohio; from **Pat Anderson** in Needham, Mass., and from **Shirley and Gene Eisenberg** of Brookline. . . . **Charlie Hathaway**, Vice-president of Torrington Manufacturing Company, has moved to Simsbury, Conn.; **Dr. Joe Smith** to the University of California at Davis, Calif.; and **Dick Fallows** to Arlington, Va. . . . In December the Boston Globe carried a story about the Wayne-Gordon encoder called the DIGISEC, designed and developed by **Sid Wingate**. . . . Your

secretary has been appointed to the Traffic Safety Committee of the Town of West Hartford. Just drive carefully in these here parts, boys.—**Richard M. Feingold**, Secretary, 10 North Main Street, West Hartford 7, Conn.; Telephone Area Code 203-233-4431, Soc. Sec. No. 048-10-2068, and employers' FICA No. 06-0673865.

'44

What with a number of notes and the news of the class reunion in Lenox, it seems there is much to report. . . . A reprint of an article in 'Home & Auto Retailer' tells of the opening of the third Kar-Kwik installation. These installations are designed and owned by **Irwin Jennis**, XV, and his brothers. Their purpose is to be a superior auto service center where the safety of the car owner is uppermost in the whole repair operation. . . . A note received from United Shoe Machinery advises that **Russell H. Hedgecock**, who took his master's in Course XIII with us, has been appointed vice-president and general manager of Converter Corporation, affiliate of United Shoe. . . . While in the title and officer category, a note from Bausch & Lomb advises that **Coke Brumley**, VIII, was appointed assistant vice-president of that firm and is director of the R & D division. . . . The Staten Island Advance reports that **Kenneth W. Nelson**, XV, president of Tech Products, has been named to the advisory board for Staten Island of the First National City Bank of New York. Ken, a resident of Emerson Hill, Staten Island, is also a partner in Robbins Reef Motor Company. . . . Dr. **Gunther Baldauf**, X, who took all his degrees at the Institute, has formed a partnership with Dr. Alfred H. Nadelman to perform consulting services to the pulp and paper industry, converters and suppliers. Prior to Gunther's new venture he was employed by Allied Paper Corporation as director of research and development.

A couple of phone calls during a trip to St. Louis last month turned up news of **Edmund W. Peakes**, XVI, who is district manager of the General Electric Company Utility Sales Operation in St. Louis. Ed apologizes that his son Lee didn't choose M.I.T. However, Ed does admit that he and Jennifer and the three children Lee, Jeffrey and Jennifer spent last summer touring New England. . . . **Carroll W. Boyce**, XV, has been active on the speech-making circuit with talks before the various trucking associations in the country. Boyce has been very close to the regulations of the Motor Carrier Act, since he is chief editor of 'Fleet Owners' magazine, a McGraw-Hill publication. By the way, the Boyces and the Heilmans were going to get together this month, but due to one of those New England blizzards, the Heilmans were unable to get out of the house! . . . An article in the 'Air Conditioning News' reports that **Dick English**, II, who is with the consulting firm of Murphy and Miller in Chicago, was elected a director of the

Refrigeration and Air Conditioning Contractors Association at its last national meeting. Dick had been very active in the organization in the Chicago area, and has been in the air conditioning field for quite some time.

A publicity release from the General Electric Company advises that **Bud West**, XV, has been appointed manager, Tide-water District Operation for the company's Defense Programs Operation in Norfolk, Va. Bud was formerly located in Syracuse where he was manager, Marine and Underseas Special Projects in the Heavy Military Electronics Department. . . . Although the weather at the moment is chill, **Scott Carpenter**, our reunion chairman, reminds me that it will be delightful in June in Lenox. To be exact, the reunion will be the 12th through the 15th of June. Scott also was checking over finances of the reunion held at the Curtis some 10 years ago. He came upon a repair bill for a broken flagpole and an overstuffed chair. Scott asked me as secretary if I had anything in the notes about the matter, and a complete review reveals nothing. I guess we will have to find a good storyteller next June who will enlighten Scott!—**Paul M. Heilman**, Secretary, 30 Ellery Lane, Westport, Conn.

'46

Last month we reported **Dave Moyer's** change of address and expressed a hope that Dave would write to fill in some details. The article was hardly in the mail when we received a Christmas card from Ann and Dave. Dave still works for Mitre, but has been sent to Washington for a two-year stint. The Moyers have found a "nifty new large house on a small lake—just right for sailfish. The young are quite happy. Will miss skiing, though. Last August we took the cog railway to the top of Mt. Washington and whom do we see but **Bob Nelson** and **Dave Hoag** and some young." . . . We also were pleased to receive an Xmas card from Lynne and **Ed Richardson**. . . . Recent address changes are: **George S. Ahmuty**, Management Assistance, Inc., 40 Exchange Place, N.Y.; Dr. **John W. Delaplaine**, Harvard University, Dev. Advisory Service, c/o Fundacion Lord, Apartado Aereo 11528, Bogota, Columbia, S.A.; **Colin McCready**, 27 Freeman Avenue, East Orange, N.J.; **Carlton E. Miller**, 30 Kirkham Street, Branford, Conn.; **Walter D. Nolte**, 96 Red Oak Road, Fairfield, Conn. That, unfortunately, winds up the news of the month. You can help increase the volume by writing.—**John A. Maynard**, Secretary, 25 Pheasant Lane, North Oaks, St. Paul 10, Minn.

'47

Ralph A. Krause, associate director of Stanford Research Institute, has been elected vice-president of the Solar Energy Society. He joined SRI in 1948 as

director of research after holding a number of high posts with the federal government. . . . Dr. **Robert S. Jackson**, area director of Montgomery County Public Schools in Rockville, Md., was elected Haverhill's new superintendent of schools. Jackson is the youngest man ever to head the Haverhill school system. . . . **L. G. Mitten** is a professor and acting chairman, Department of Industrial Engineering, Northwestern University. Previously Dr. Mitten was a professor of industrial engineering at Ohio State. . . . The Royal Architectural Institute of Canada has announced that fellowship in the Institute's College of Fellows has been conferred upon **Ernest John Smith**. . . . Dr. **C. Huckaba** has been named head of the department of chemical engineering at Drexel Institute of Technology in Philadelphia. Dr. Huckaba is widely known for his research and development of mathematical models necessary for the formation of a completely automatic chemical processing plant. . . . Colonel **John U. Allen** has been appointed executive vice-president of the Ohio Valley Improvement Association. Prior to his new position, Colonel Allen was president of the Ross Corporation, New Orleans. . . . **Oiva R. Anderson** has been appointed vice-president of the engineering science division of American Science and Engineering, Inc., of Cambridge, Mass. . . . **Harold M. Brodsky** was recently appointed general factory manager of Fafnir Bearing Company of New Britain.

William Duncan has been named Washington, D.C., district manager of the Atomic, Space and Defense Group, Westinghouse Electric Corporation. In this position he will serve the needs of the Air Force, NASA, and other government agencies. . . . Dr. **J. J. Baruch** is currently on the staff of Bolt, Beranek and Newman, Inc., working as a supervisory engineer and directing programs in electronics, servo-mechanisms, biomedical engineering, and systems research. . . . **Allen N. Sweeny**, manager of the Microbore Division of DeVlieg Machine Company, Royal Oak, Mich., has been elected a vice-president of the company. He will also continue as manager of the DeVlieg Microbore Division, responsible for all phases of engineering, manufacturing and sales of precision tooling produced by the division; he is recognized nationally as one of the industry's leading authorities on design and application of single-point cutting tools. . . . **Kenneth M. Tebo** has recently been appointed to head a new section of the Mathematics and Physics Division at Midwest Research Institute. . . . **Albert Openshaw** has been appointed director of manufacturing of Mohasco Industries, Inc. . . . **Joseph R. Myers** was recently promoted to the rank of colonel at Edwards A.F.B., California. . . . Remember, we are interested in your job.

The following change of addresses have been received: **Neil M. Blair**, 34 Horton Lane, New Canaan, Conn.; **Edward P. Brandeau**, 599 Highland Avenue, Needham, Mass.; Dr. **Thomas P. Cheatnam, Jr.**, Litton Industries, 1875 Connecticut Avenue, N.W., Washington, D. C.;

Charles S. Hazard, Bayview Lane, Huntington, N.Y.; **Gibson Reynolds**, 20 Terrace Avenue, Hasbrouck Heights, N.J.; **John C. Ripley**, RD #2, Colts Neck, N.J.; **John B. Sproul**, 40 Chatfield Road, Bronxville, N.Y.; Mrs. **Sylvia L. Waller**, 10315 Lloyd Road, Potomac, Md.; **Paul S. Williams**, 2309 Weymouth Court, Raleigh, N.C.; **Albert Openshaw**, Cranes Hollow Road, Amsterdam, N.Y.; **Alexander B. Ward**, 279 Hickory Hill Road, Chagrin Falls, Ohio; **Harold W. Wyatt**, 36625 Jackson Road, Moreland Hills, Ohio.

Also, **Winifred Bennett**, 1512-A South 56th Street, El Cerito, Calif.; **Joseph D. Weed**, Walden Lane, Hockessin, Del.; **Clinton C. Moore, Jr.**, 5528 Mapleridge Drive, Cincinnati, Ohio; **Mary J. McGlinckey**, 1284 Beacon Street, Brookline, Mass.; **In-Meei Neou**, 14 Livingston Place, Bridgeport, Conn.; **Robert L. Seidler**, 6 Portland Road, Summit, N.J.; **Colonel William L. Stormes**, 85 South Magnolia Drive, Satellite Beach, Fla.; **Harold W. Wyatt**, 36625 Jackson Road, Moreland Hill, Chagrin Falls, Ohio; **Alan McClennen**, Silver Hill Road, Lincoln, Mass.; **Philip R. Jonsson**, 606 Vaugh Building, Midland, Texas; **Dudley F. Church**, Crown-Zellerbach Corporation, Camas Research Division, Camas, Wash.; **David W. Bareis**, 24227 Mariano Street, Woodland Hills, Calif.; **David R. Brown**, 2527 Greer Road, Palo Alto, Calif.; **Robert L. Heaton**, 3074 Claremont Avenue, Berkeley, Calif.; **Guy Hardin, Jr.**, 886 Victoria Place, St. Louis, Mo.; **Dr. Wilfred L. Freyberger**, Michigan College of Science and Technology, Houghton, Mich.; **Dr. Kenneth H. Fischbeck**, 125 Hun Road, Princeton, N.J.; **Lieutenant Colonel Harold B. Ellis**, Iowa State University, Technical Institute Program, Ames, Iowa; **Emmett T. Craig**, 1374 Knollwood Drive, Baton Rouge, La.; **Raymond Chung**, 208 Alcott Drive, Neenah, Wis.; **William W. Candill**, 3636 Richmond Avenue, Houston, Texas; **Dr. Eli Robins**, 1 Forest Drive, St. Louis, Mo.; **Arne G. O. Mothander**, Transvontor, Box 33, Sandviken, Sweden; **Melvin M. Locke**, 24 Ralph Avenue, Sinking Spring, Pa.—**Martin M. Phillips**, Secretary, Tyco, Inc., Hickory Drive, Waltham, Mass.

'48

Although you are reading these notes in March, they are being written in the middle of January in what has turned out to be our worst snow storm of the year; but the snow reminds me to say that I trust all of you did have a most enjoyable holiday season and that the coming year will be filled with happiness, success and satisfaction in all your endeavors. . . . As a follow up to the squib in the December notes regarding **Warren J. King**, we have received additional information concerning his civic interests. The November 23 issue of 'Business Week' had an enlightening article about the notable work of the Council for Reorganization of Ohio State Government, which was popularly known as the "Lit-

tle Hoover Commission," and its recent 70,000-word report to Governor James A. Rhodes outlining ways in which the state could save between \$40 and \$50 million a year. Warren served as advisor to this volunteer group of 88 middle-management men. The commission, aided by the heads of the 36 major state departments with personnel and money from 100 Ohio companies, surveyed the various state operations from a management point of view. At that, they feel that they have merely scratched the surface; for unofficially they have figured savings could eventually run to nearly double the present estimate.

A recent release from the Bethlehem Steel Company has advised us that **Donald J. Blickwede**, who received his Sc.D. in metallurgy with our class, was promoted to director of research. In his new position he will have full responsibility for the company's Homer Research Laboratory and the Patent Division. Don took his undergraduate degree in chemical engineering at Wayne State University and his masters at Stevens Institute of Technology. After leaving Tech, where he served as a research assistant while completing his doctorate, Don headed the High Temperature Alloys Branch of the Naval Research Laboratory for two years. He then joined Bethlehem Steel as a research engineer, becoming associate director of physical metallurgy research in 1956 and director of applications research in 1961. He was named manager of research in January, 1963. In addition to his authorship of many technical papers and his active participation in numerous technical and professional societies here and in England, I am very pleased to report that he is also serving Tech as a member of the Educational Council, which as you know serves our alma mater in interviewing various high school seniors who have applied for admission to the Institute. Don also is a member of the Industrial Advisory Committee of the University of Pennsylvania, and is a member of the board of trustees for the American Society for Metals. Congratulations and good luck to you, Don.

Those of us who are bothered from time to time with the need for good auto service perhaps ought to go to Newark, New Jersey, to the shops of our classmate, **Jay Jennis**. With his two brothers, Erwin, '44, and Leonard (an RPI man), Jay has recently opened a \$250,000-auto service center, their third in the metropolitan Newark area. Officially known as Kar-Kwik Auto Service Center, Jay and his staff are equipped to handle service on everything from brake linings and mufflers to air conditioning installations and automatic transmission rebuilding. A unique facet of their service center is a multi-colored waiting lounge with television, women's fashion magazines, and coffee and cake for the convenience of customers waiting while their cars are serviced. The three brothers started their business in 1955 and have leaned heavily upon their technical training to set up fast and efficient service operations.

Albert J. Kelley, who received his master's in Course VI with us, presented

a talk on "Research for Electronics in Space" at a recent meeting of the New York Metropolitan Professional Technical Group on Aeronautic and Navigational Electronics of I.E.E.E. Interestingly enough, Al also spoke at the December meeting of the M.I.T. Club of Northern New Jersey, and gave what this reporter feels to be one of the most comprehensive and interesting reports he has heard on NASA's organization and operations. Al has been serving since November, 1961, as director of electronics and control in NASA's Office of Advanced Research and Technology. Prior to this, he was with NASA's Agena Launch Vehicle Program as program manager, and subsequently became technical programs officer. He took his undergraduate work at the Naval Academy in 1945, and after completing his master's at the Institute in 1948, returned in 1954 for further graduate work, majoring in aeronautical guidance and flight control, and received his Sc.D. in 1956.

At last September's annual meeting of the Purchasing Agents Association in Philadelphia, which involved a trip through the Franklin Institute, **Wally Kinnan** presented an exciting exhibit and talk at the new Weather Center at the Franklin Institute. Wally is director of the center and is one of the best known meteorologists in the Philadelphia area. Besides M.I.T., Wally studied at the University of Chicago and Ohio State University, as well as several Army and Air Force technical schools. During World War II, he was a bomber pilot in Europe but unfortunately was captured and spent much time as a POW. On the lighter side, Wally, in his free moments, escapes from these unpleasant memories by tooting on his trumpet, as in his younger days when he had his own band.

Another recent release informs us that **Colonel Charles D. Y. Ostrom, Jr.** has now become commanding officer of the U. S. Army Ballistic Research Laboratories, Human Engineering Laboratories, and the Coating and Chemical Laboratory at Aberdeen Proving Ground. For the past three years he has been commanding officer of the European Research Office of the U.S. Army Research and Development Group in Frankfurt, Germany. He received an S.M. degree with us and also has a B.S. from the University of California and an M.S. in engineering from Harvard. In addition, he was graduated from the Command and General Staff College at Fort Leavenworth in 1955 and the Industrial College of the Armed Forces at Fort Leslie J. McNair in 1960. Commissioned a second lieutenant in the Ordnance Corps in 1941, he was originally stationed in San Francisco as ammunition officer, Headquarters Fourth Army; then with the Ninth Army, which carried him from England into France, the Netherlands and Germany through 1945. Subsequently, he served as executive officer, Research and Development Division, Samuel Feldman Laboratories at Picatinny Arsenal; then as chief, Research Division, Office of the Chief of Ordnance. . . . The University of Tennessee recently announced that **Charles R. Walker**, an-

other graduate student who received his S.M. with our class, has been appointed head of the Department of Civil Engineering in the University's College of Engineering. Charlie has been acting head of the department since the death of the former head. He received his B.S. in civil engineering from the University of Tennessee in 1934 as well as an M.S. in 1942; he has been on the faculty of the university for the past 15 years. . . . Those of you who read the New York Times on January 8 perhaps noticed the news report that the British have given the Bahamas a new constitution, granting them the right of self government. An added bit of interest in this is that the first premier of the Bahamas is Sir Roland Symonette, who as many of you know, is the father of **Bob Symonette**, a fellow classmate of ours during the rough and tumble days of the Navy V-12 Program and the "U.S.S. M.I.T." under the nefarious Lieutenant F. Curtiss Canfield! . . . That's all the notes for this month. Please just take a moment and drop us a line.—**John T. Reid**, Assistant Secretary, 80 Renshaw Avenue, East Orange, N.J.; **Robert H. Mott**, Secretary, Hebron Academy, Box 113, Hebron, Maine; **Richard V. Baum**, Assistant Secretary, 1718 E. Rancho Drive, Phoenix, Ariz.

'49

My normal sources of information have not yet appeared this month and the deadline is here. The few items below come from the Christmas mail and from M.I.T.'ers in, and passing through, London. According to the Alumni Register, **Earl Eames, Jr.**, XV, has moved from the Boston area to join Cresap, McCormick and Paget, in New York City. . . . **Robert C. Peterson**, XV, sent along a copy of his family Christmas letter from Abadan, Iran, where he has been a senior management analyst in the Iranian Oil Refining Company for the last two years. Last year, he and his family (wife and two boys 6 and 8) took a round trip of the globe as part of their annual leave trip home to the U.S. It all sounds like a great life. Where do I sign up? Bob notes his history since graduation: "Ebasco Services, Inc. for three years in Washington, D.C., then Idaho on the Cabinet Gorge Dam Construction Project. Married Audrey Norling (W.S.C. '49) in 1952. . . . With Kaiser Aluminum in Louisiana for 8 years in Industrial Engineering . . . (am now) enjoying the mixture of nationalities in the consortium—American, English and Dutch. All the best for 1964."

On December 19, my wife Sonya and I had the pleasure of attending a dinner meeting of the M.I.T. Club of Great Britain and meeting the new Alumni Association President, Robert Winters, '33. Also there were Mr. and Mrs. Arnold Judson, '47, of Tech Show fame. From Arnold, I learned that **Andrews M. Lang**, VI, is now in Wales, working for the Emerson Consultants, Ltd., which is Arnold's firm as well. Later in December, John Kirk-

patrick, '48, passed through London on his way to Lagos, where he will be heading up ADL's continuing Nigerian project. From him I learned that **John Kunstadter**, VIII, is now president of the Formfit Company. . . . According to a Christmas Card from **Geri (Sapolski) Kunstadter**, X-A, she and John have just bought a house in London, which they will use this summer. She writes: "We all miss London tremendously, and when this house came our way we couldn't resist it. I hope we will someday be living in it permanently, but we are delighted to have it even for a few months each year."

By the time you read these notes, our grand 15th Reunion will be only three short months away. Present indications are that our record-breaking 10th Reunion attendance will be exceeded. In addition to those listed in February, those coming include: Harry Lambe, Charlie Sutherland, F. Mitchell Halle, Bert Chope, Paul Watkins, Ed Wilson, and Jim Maslon. More names will be published next month since we know that many men have just not gotten around to sending in their cards. . . . The Program Committee met for an evening of scheming on Monday, January 20. New names on the committee include **Paul Johnson**, **Randy Hogan**, and **Neil Morrison**. They and the others have one simple aim: to give you the best time you ever had.

Your assistant secretary is greatly indebted to **Jan Hoegfeldt** for his thoughtfulness in sending along the annual newsletter which he and Ted Metzger, '50, get out on behalf of the Alpha Tau Omega men who attended M.I.T. in the late forties and early fifties (mid-century). Appropriately enough, the letter is titled 'The Midcentury MITATO.' The following notes are taken from the newsletter. Fred Adams, '50, is a partner in a new company—Wank, Adams, and Slavin, Architects and Engineers. They have their offices at 155 East 42nd Street in New York City. Fred has also moved into a new house this year. . . . **Bill Atkinson** has become very active in local educational activities. He is now a member of the Ledyard, Conn., Board of Education, and Chairman of the Ledyard High School Building Committee. He is also chairman of the St. David's Episcopal Church Building Committee, and a member of the Bishop's Committee at the same place. At Electric Boat Company he is chairman of the Management Council, in addition to his duties as chief hull designer. . . . **Carl Clark** is in the process of moving back to Ormond Beach, Fla. He was transferred there by his company on December 15. We do not know his new address as yet, but the newsletter has the company address (Electro-Tec) in Florida on its address list. . . . **Randy Cleworth** is sales engineering for Link Belt in Cleveland, while he has moved to a new house in Shaker Heights. . . . **Bill Estes** received his private pilot's license last summer and has been doing considerable flying. . . . **Bob Griggs** and Jay have really been traveling this year, visiting Spain, Italy, France, England, Guadeloupe, Martinique, Trinidad, and Venezuela. . . . On one of their

rare nights home, the Haskews timed a visit and a reunion of 'Puertorriquenos.' . . . **Jan Hoegfeldt** is well settled in Cleveland now and has seen the Cleworths several times. During the past summer, Jan had a visit from his uncle who lives in Norway, and whom Jan hadn't seen in 33 years. Jan has been appointed to the National Development Committee of the American Society for Metals. . . . **Ed Kerwin** was late replying last year, and we missed his big news of 1962, which was a pair of twin boys, born February 15. They are named Ned and Paul. During this past year, Ed presented papers at the Acoustical Society of America in May in New York City, in November in Ann Arbor, Mich., and at the U.S. Navy Ship Silencing Symposium in Groton, Conn., in May. He visited **Sam** and **Betty Morrison** in New London. The Kerwins have bought some property near Chelsea, Vt., and saw the **Batteys** up there several times this past summer. . . . **John Knowlton** continues to lead 'the soft, easy life' down in Houston. He is economic analyst for the Supply and Transportation Department, Humble Oil.

If you haven't yet signed up for '49's 15th Reunion, get in the mood by reading the November Technology Review report of the '48 15th last year, held at the same place; badger your wife into agreement and sign up now. See you there.—**Frank T. Hulswit**, Secretary, Arthur D. Little Ltd, 197, Knightsbridge, London SW7, England; **Fletcher Eaton**, Assistant Secretary, 83 Herrick Road, Newton Center 59, Mass.

'55

From Rolla, where he is teaching geology at the Missouri School of Mines, **Arthur Brownlow** has answered our pleas for news. After being recalled to the Army during the Berlin crisis, he returned to civilian life in August, 1962, and moved with his wife Anne and daughter Jennifer, now almost three, to Rolla. Last summer Art was one of 21 geology professors from the United States in an International Field Institute, sponsored by the American Geological Society and financed by the National Science Foundation, that spent two months touring Norway, Finland, and Sweden. The group, guided by leading geologists of these countries, visited places of interest to geologists, attended lectures, and did some laboratory work, all for the purpose of improving the teaching of geology in this country. In Upsala, Sweden, Art met **Eric Thompson**, who with his wife and small daughter was spending a month at the university there between a year of post-doctoral study in England and their return to the U. S.; Eric is now teaching at Case Institute of Technology. . . . **Chan Stevens** hastens to explain his recent change of address in Mansfield, Ohio. In October he acquired two dogs, five puppies, three boys, and a wife! He has disposed of five pups and a dog, but intends to keep the rest since Sally has proved to be an indispensable sailing crew. The thermostat business

now has plants in Canada and Tennessee in addition to the headquarters in Mansfield; so 1963 was not an uneventful year for Chan. . . . The only other news, gleaned from the address files, which we bring up to date when we get really desperate for news, is a few major changes. **Robert Dyck** has joined the Fox Appalachian Studies at the University of West Virginia in Morgantown. . . . **John Zimmer** has moved to Milan, Italy, with Goodyear. . . . **Lawrence G. Brown** Associates, Inc. now makes its headquarters in Zug, Switzerland. . . . **Ruth Jacobson Grommers** is now living in Geneva. . . . **Roger Joy** is now at the School of Biological Sciences of the University of East Anglia in Norwich, England. . . . And finally **Donald Lazo** is in Barraquilla, Colombia, with Alumino de Colombia, Reynolds Santo Domingo S.A.—Co-secretaries: Mrs. **J. H. Venarde (Dell Laniar)**, 2401 Brae Road, Ardentown, Wilmington 3, Del., **L. Dennis Shapiro**, Aerospace Research, Inc., 130 Lincoln Street, Boston 35, Mass.

'56

This month we have a few gleanings from the Christmas mail which was rather sparse. **Don Brideweser** is working in the Marine Reactors Branch of the A.E.C. in Washington, D.C. . . . **Phil Bryden** writes that he is an assistant professor of psychology at the University of Waterloo in Ontario. This school was started in 1957 as a co-operative work-study engineering college. In 1960 liberal arts were added, and now Phil is helping to start the Psychology Department. . . . **Dave Eaves** is with the math department at the University of Washington in Seattle. . . . **Skip Luhrmann** writes that he is now in his third year of medical school and expects to go into psychiatry. . . . **Al Marsh** is working in the acoustics group at Douglas Aircraft. Among his projects has been work on the design of the engine noise suppressors of the DC-8. Al has also received his master's from U.C.L.A. . . . Another Christmas letter from **Bob** and **Pat Mansperger** in Euclid, Ohio, finds the whole family well. Bob is still with Warner and Swasey when he is not off attending engineering conferences and equipment shows. . . . **Roy Menzell** is now heading operations research activities at H. P. Hood and Sons (milk, for those who have forgotten Boston). Roy was formerly with A. D. Little, but he still teaches evenings at Northeastern and recently authored a programs text on inventory control. . . . **John Pierce** has received an award from the Ford Foundation for his doctoral thesis. The Foundation selects five theses each year in the fields of economics and business and pays for the cost of publication by Prentiss Hall. John is continuing at Tech but he is actually employed by I.B.M. to develop new computer applications. . . . For those who missed it, be sure to go back and read the January 18 issue of 'Business Week.' The feature article is on the changing curriculum at Tech and the cover is a color picture of the campus

which will show a lot of interesting changes to those who have not visited Cambridge recently.—**Bruce B. Bredehoff**, Secretary, 16 Millbrook Road, Westwood, Mass.

'57

Phil Gallagher dropped me the following note from New York: "I'm just back from two years of radiation biology studies at Guy's Hospital Medical School in London and am now employed in the Division of Biophysics of the Sloan-Kettering Institute for Cancer Research here in New York. The work is intensely stimulating and shows signs of better things for the future, but the plight of many of the patients of today is very depressing indeed. We work and hope. I've enrolled in an M.A. program in psychology at the New School for Social Research, primarily to keep myself busy and out of trouble. You must not listen to any of my friends who claim I'm looking for a status symbol (an arts degree) to flash at those who have only science degrees. Such talk! I'm still single and on the prowl, but I find that my list of exquisitely eligible women has been literally decimated by marriage and creeping old age during my stay in London. It's increasingly difficult to remain a connoisseur (self-appointed) of fine women without resorting to 20-year-old children, and my pride won't let me do that. Will desperation and frustration exact their due?" . . . The observant among you will realize how old this letter from **Al Borstein** is: "Greetings from Cape Canaveral and all the missile wonders. It is like a wartime experience to live in this town. People work all day and night and go at it six or seven days a week. Since my graduation from the Harvard Business School in 1962 I have been with Levitt and Sons. The experience has been wonderful and the opportunities are abundant. I was recently named assistant general manager for our Florida operation. It's a new move for Levitt into the Florida housing market; we hope to be able to produce about 500 homes a year for a start. I haven't used my engineering for some time, but the background sure helps." **Martin Bressler's** letter read as follows: "After graduation I worked for Sikorsky Aircraft until early in 1958 when I was called into the Air Force per Rotten Old Tin Can agreement. I couldn't do anything right at Tech and continued my winning ways in the Air Force, by joining the ne'er-dowells and becoming a fighter pilot (F-100's). During a tour in Japan I met my wife, the former Joyce Whittenberger (Albion, '58). At present I am an engineer for AiResearch Manufacturing Company in Phoenix, Ariz. **Dan Read** is still in the Air Force flying KC-135's. **Dick Westerhoff** was or still is an interceptor pilot."

Alan Kotliar wrote to tell me that **Sherman Chow** recently moved back to Toronto. After leaving M.I.T. Sherman traveled extensively, studied for a time in Germany, and then received a masters'

degree in electrical engineering at Cornell. At present, Alan reported, he is doing research in medical electronics at the University of Toronto. . . . **Bob Jacobs** sent the following letter: "At present I am quality control manager at Polaroid's new film production facility. I am living in Concord with my wife, Peg, and three daughters. My local activities are the Junior Chamber of Commerce (President), the West Concord Union Church (treasurer and member of the Finance Committee) and the School Committee's subcommittee on School Construction Planning." . . . **Andy Blackman** wrote as follows: "I recently passed my New York exams for registration (Registered Architect). I'm still living in Greenwich Village in a big studio, sailing summers, skiing winters as head instructor for the American Youth Hostels, doing freelance architecture and interior design, and working full time for George Nelson and Company designing interiors, furniture, lighting, and buildings. Nelson is one of the few renaissance men in design, and our office handles all sorts of work including graphics, corporate identity programs, film-making, and product design for many blue chip manufacturers. I've been with Nelson about nine months. Previously I was associated with William Tabler (Architect) where I worked on designs of hotels for the Hilton and Intercontinental chains among others." . . . Well that's enough for now. I will have more letters next month.—**Frederick L. Morefield**, Secretary, 1-A Acorn Street, Boston, Mass.

'58

A long delayed letter from **Toby Carlson** finally finds its way into these notes. He writes from England that he formerly "worked as a contractor to the U.S.A.F. at Bedford in meteorology research. Now I'm in England after receiving an opportunity to study at Imperial College (in meteorology) in London. I live in Ascot with my wife, Ara Belle. I hope to receive my Ph.D. in two years." Toby sends along news about some other classmates. "**Lee Bricker** is finishing his medical internship in Pittsburgh and will probably do his residency there. . . . **Gerald Guralnik** married Sue Ellovich in June and will receive his Ph.D. this summer from Harvard in (high energy particle) physics. He expects to carry out a two-year post-doctoral at Imperial College, London. . . . **Arthur Alexander** is getting married this month to a girl from Philadelphia and is quitting IBM in Poughkeepsie to study for his M.A. in economics beginning this fall at the University of London. . . . **Al Wray** has returned from Europe, having played with the Halle Orchestra for a couple of years. He begins work at IBM, in Poughkeepsie this summer. . . . **Bill Griffin** received his Ph.D. from M.I.T. in mechanical engineering and is fulfilling his ROTC requirement. . . . **Charles Braun** is fulfilling his ROTC requirement in Virginia with the Quartermaster Corps after studying physics at Washington University Graduate School in St. Louis.

... **Karl Kornacker** received his Ph.D. at M.I.T. in biophysics and has joined the research staff there. ... **Michael Gordon** is living near Poughkeepsie working for IBM. He has, I believe, two children. ... **Franklin Prieser** is attending Hahnemann Medical School in Philadelphia. ... **Nathan Bromberg** is working as an independent consultant in electronics and bioelectronics in the Boston area."

I met **Art Zimmet** on the shuttle from Boston to New York several weeks ago. He still leads the gay bachelor's life in the big city—apartment, girls, travel and all that. The dental supply business is keeping him on the go. He reported that **Larry Kaiden** had one of his biggest years in the liquor business in New York. ... **Mike Gottlieb** appears to be a good prospect for our millionaire's club since he started his own business nine months ago in the fiberglass field. Mike is married and the proud father of a daughter. His brother, **Dick Gottlieb** is still in Italy with Olivetti and has taken a sumptuous villa on the Italian coast. His three children will grow up to be bilingual. ... I saw **Glenn Strehle** at his new apartment in Boston; married life becomes him. ... When in Pittsburgh in January I saw **Kent Bloomer**. Kent and Nona have a young son, Mark. After three years at the Yale School of Fine Arts he became an assistant professor in Architecture at Carnegie Tech. More importantly, KB has become an accomplished sculptor having had several private shows in New York City as well as winning competitions in Pittsburgh.

Charles Brown is currently lecturing in economics at the University of Ibadan in Nigeria and was the Institute's representative at the University's recent installation ceremonies. ... Several promotions have recently taken place. **Alan Jarnagin** is now manager of M & T's new tin recovery plant in Seattle, having been with M & T in New Jersey and California since graduation. ... **John Connor** was appointed director of research and development of the Bradley Sun Division of American Can. ... **Larry Andrews** was appointed as assistant to the Ritter Company's product manager. He is still in Rochester with wife and three children. ... **Gregory Hood** has been appointed an instructor at Boston University in the College of General Education after being a teacher at Brooks School in Andover, Mass. He married Mary Lee of Brookline in August. ... **Tom Stewart** shared the spotlight in a nice article in the Boston Sunday Herald about the activities of Perspective, Inc. of Needham Heights. This is a new and scientific kind of placement service for electronics engineers and scientists in the \$8-35,000 salary range. So if you're looking? ... The bachelors' bachelor **Mike Kenyon** got crossed off the list on December 27 in Kansas City by marrying Jayme Ann Begor. ... **Leland Hartwell** and **Lee Jones** received National Science Foundation post-doctoral fellowships to the Salk Institute for Biological Studies (24 months), and the California Institute of Technology (12 months), respectively.—**Cornelius Peterson**, Secretary, 4 Rambling Brook Road, Upper Saddle River,

N.J.; **Antonia D. Schuman**, Western Associate, 22400 Napa Street, Canoga Park, Calif.; **Kenneth J. Auer**, Midwestern Associate, 23105 Stoneybrook Drive, North Olmsted, Ohio.

'59

Another friendly reminder—our 5th Reunion is only three months away. For reservations or information write to committee chairman **Dave Packer** or any of the other members at Tech. **Phil Beach** has turned in the following 5th Reunion news for us. "Believe it or not, five years have passed since graduation, and your Reunion Committee has planned a smash-eroo weekend at the Chatham Bars Inn well out on old Cape Cod. In November a mailing was made to all '59ers including plans for the reunion, a brochure about the inn, and a card to send back to tell us your plans. We have received 84 cards, 64 of which have indicated probable reunion attendance and great enthusiasm for the whole idea. Are you among the hundreds who have not returned their cards? If so, please send in yours today so we can continue with our planning. If you lost your card or didn't get one, please drop a card or note to **Dave Packer**, Room 52-561, 50 Memorial Drive, Cambridge. We will shortly restrict our mailings to those who have indicated interest, so if you want to be in on the biggest blast since Senior Week (remember that stag banquet?), do let us know. Among those who returned cards, **Dave Weisberg**, **David Taylor** and **Richard Lyons** proudly announce that they are still within the ranks of us happy bachelors, and hope to show at Chatham.

"Perhaps even prouder (and happier?) are **Paul Silverman**, **Al Ream**, **Howard Ziff**, **James Conklin**, **Richard Desper** and **Ron Colier**, who hope to be at the reunion with their new brides, who were, respectively, **Ruth Gesmer**, **Bliss Finleyson**, **Anne G. Finkelman**, **Betty Calif**, **Beatrice Smith**, and 'a gal from L. A., Dale.' ... I had the good fortune to usher at **Bick Hooper's** wedding on 28 December. He married a girl whose name was (and still is) **Ginny Hooper**. Both families were traced back about eight generations to establish a correlation coefficient of zero. ... Others hoping to join us at Chatham Bars are **Marie Wray**, who now has two children in Torrance, Calif., **Bill White**, who is among us old faithfuls teaching at the School of Industrial Management, and **F. Bielawa**, who is with Eastman Kodak in Rochester. **Larry Broutman** received his Sc.D. at M.I.T. in June and is now with I.I.T. Research Institute. ... **Mike Brunschwig** is with Bendix, Mishawaka Division. ... **Arthur Collins** is working as a metallurgist for AVCO. ... **Neal Des Ruisseaux** is a general foreman at Chevrolet in North Tarrytown. ... and **Greg Hofmann** is with Systems Technology at Princeton, while **Teruhisa Kuroda** is at National Computer Analysts in the same town.

"**Bobby Williamson** is with McDonnell Aircraft in St. Louis. ... **James**

Hofmann says that the reunion "sounds great" and offers the excellent suggestion that "**Zeiders** buy everybody a drink." Hear that, **Glen**? Send in your card! ... **Bobby Muh** hopes that the class will "elect a new secretary to replace the present incompetent individual!" ... Reunion Committee members **Ralph Alter**, **Larry Bishoff**, **Al Bufferd**, **Al Oppenheim**, **Dave Packer**, **Dick Sampson**, **Gerry Stephenson** and **Glen Zeiders** will be dusting off the welcome mat. If all of the 64 people who have indicated attendance come to Chatham Bars, we should have a fine old time, but we want more. So will the rest of you please get moving and write us your plans. Personally, I think it will be terrific to see the gang again and all the better to do it at the delightful Chatham Bars Inn. Hope to see most of you there. In the meantime, watch this column for further news about further plans by the Reunion Committee. Kindest regards, **Phil Beach**."

Mario Rathle writes that he is now working for the International Division of Fenwal Corporation. Mario has been doing extensive traveling for Fenwal throughout Europe but has still found time to work on a master's in business administration at Babson Institute. Mario hopes to finish within the next two years. ... My apologies to **Jack Fehan** and **Seymour Rubenstein**. Because of travel last March and April, I missed acknowledging their letters. **Sey** and **Sylvia** now have a son, **Marc Elliot**, born 22 February 1963. The Rubensteins are living in Anaheim, Calif. **Jack** was married in December, 1962, to **Madeline Snyder**. **Jack** and **Madeline** reside in San Bernardino, Calif. I hope everyone will advise me of any changes during the past year. Please note my new address and try to drop a line this month.—**Robert A. Muh**, Secretary, 165 W. 66th Street. (7R) New York 23, N.Y.

'62

Who will be the first person in the class to break the ice and write to me in 1964? The lucky man is guaranteed three full lines of print in The Review. For the present, I will mention the few bits of information that have fallen on my anxious ears. **Ronald DiGregorio**, VIII, who was president of the Rocket Society while at M.I.T., is now working for Raytheon in Boston. ... **Dr. Ralph R. Rumer, Jr.**, I, is an associate professor of civil engineering at State University of New York at Buffalo. He taught at Rutgers in New Jersey previously. **Dr. James J. Burke, Jr.**, V, is working at Chemstrand Research Center in Durham, N. C., as a research chemist. ... **Jan Hyde**, I, is now working and living in San Francisco but as yet I have not been able to determine the name of the company. ... I heard that **Curt Hoffman**, VI and his wife have been blessed with another child, but I have not received any further details yet.—**Jerry Katell**, Secretary, Stanford Business School, Palo Alto, Calif.



SAVE THE DATE!

June 15, 1964

It's Alumni Day again, with tours and laboratory demonstrations, luncheon under tents in the Great Court with President Stratton and your other fellow Alumni, a presentation of some exciting new developments, social hour on the West Mall, dinner in Rockwell Cage, and Arthur Fiedler leading the Boston Pops Orchestra in Kresge Auditorium. It's a day you will remember.

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